

The Vital and the Positive: A Genealogy of the Science of Man

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Declaration

I confirm that this submission is my own original work.

Rob Brooks

Abstract

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The thesis presents a historical study of the Enlightenment project for a Science of Man which takes its perspective from the 20th century philosophical ‘death of man.’ From the contemporary move against humanistic ideals associated already from the 1930’s exemplified contrasting interpretations over an Enlightenment Science of Man and its ambitions. In the 1960’s Michel Foucault’s pivotal approach gave this dispute the perspective of the ‘death of man,’ which this thesis frames in relation to his reading of Kant. This forms a perspective from which to examine Kant’s positive ambitions, as Foucault saw them extending beyond Critique. But a second perspective is taken up through what Gilles Deleuze ascribed to an empiricist tradition subjugated under a vitalism. This is indicated by the ‘age of Bichat,’ the French medical tradition which Deleuze contrasted with Foucault’s ‘rarefied form of positivism.’ A genealogical history of the Science of Man frames these as alternative models to a critique of reason, two perspectives derived of the Enlightenment project.

The ‘age of Bichat’ is understood around the French Enlightenment discourse on vitalism modelled on a post-Cartesian concept of the body. This gave the positive ambitions for early 19th century Positivism explored through Saint Simon’s ‘concept of labour’ and August Comte’s epistemological critique, intended as substitute for an older Enlightenment model. However, this becomes further complicated by the new positive paradigm of experimental medicine. The effect, during the early Third Republic, was to re-orientate the philosophical perspective on the older project for a Science of Man. This served Henri Bergson’s critique of Positivist historical formations, but also the neo-Positive model of Emile Durkheim and the ambition for an autonomous new science that delimits a collective ‘order of things.’ The dilemma was legitimating vital norms in a modern society. This genealogy situates these as perspectives seen through the 18th century Science of Man from which the vital and the positive remained elements historically resistant to being the determinable object of study.

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Introduction: The Vital and the Positive: A Genealogy of the Science of Man

From the theoretical disputes between Structuralism and Existentialism leading up to the period around 1968, Michel Foucault saw the positive sciences as a media driving social processes against contemporary humanism. After 1970, he took up a genealogy serving as a ‘training’ of historical conditions which was credited with invigorating critical possibilities with the radical concept of power, which he later called his positive approach.¹ It has been claimed that this positively served new and concrete ways of how “power penetrates the subject’s very body,” and gave the “biopolitical potential of a new paradigm,” and which saw Foucault opening “a promising alternative to a critique of reason.”² In the 1986 commentary by Gilles Deleuze, Foucault’s concept of power is described as close to an empiricist tradition that was validated according to an aesthetic ‘of the body.’ Yet this appeared to define more closely Deleuze’s own thought. His commentary describes Foucault’s epistemological practice as a “rarefied form of positivism” which expressly distinguished Archaeology from the concept of power on the basis that the latter did not pursue a positivistic form of validation.³ Rather, the concept of power was a positivistic empowerment – something which Deleuze subjugated under a vitalism. Others, however, saw this as lacking scope for critical autonomy. Critical theory, for example, which associated itself with an anti-naturalist intent, saw both Positivism and a vitalism as inherently problematic.⁴

This is a problem defined in this thesis through a stance vis á vis an Enlightenment Science of Man. During the Enlightenment, a Science of Man meant an idea that could be sustained of a unified science that would expand the understanding of man’s nature through the active study of human beings and their world: since science stood as the creation of man’s higher faculties, a

¹ Foucault (1997a) p124-125, Foucault’s comment on a ‘felicitous positivism’ in ‘The Discourse on Language’ in Adams (1986) p162, Foucault discusses the background to his development during the 1960’s in Foucault (1991) esp p131ff.

² “Biopolitical potential of a new paradigm of Power,” Hardt & Negri (2000) p23. The possibility accorded to an “unprejudiced analysis of the concrete ways in which power penetrates the subjects very bodies” according to Agamben (1998) p5

³ Deleuze (1988) p13

⁴ On anti-naturalistic argument see Popper (1961) and Adorno (1976) p xxxvii, Habermas ‘A Critique of Human Reason as the Unmasking of the Human Sciences: Michel Foucault’ originally chapter 9 in Habermas (1987), reproduced in Foucault (1994a)

Science of Man looked to sustain this through the ambition for creating a higher language, a scientific form of discourse adequate to the task of articulating man and his world.⁵ Such a reflexive ambition is, for example, evident in Germany towards the end on the 18th century, where the drive for new and rich philosophical languages culminated in Kant's Transcendentalism. Separated from the Kantian tradition, an Enlightenment ambition in France grounded general theories of societies a relation to the history of science. At the start of the 19th century, this was an engagement evident in a nascent French Positivism, commonly associated with Saint-Simon and Auguste Comte. This aimed at displacing a scholastic legacy with modern science they followed an ambition that remained closely tied to a political legacy of the French Revolution and its universalising hegemony. The paradox is that even as the scientific foundations on which they initially drew disipated through diverging scientific practices during the 19th century, the aspirations persisted in various theoretical forms. These give twin perspectives to be taken up as a problem of an Enlightenment Science of Man

In this thesis, the positive and the vital relate to the idea of what could be sustained under this unified science of this era. When a later Critical perspective took up a twofold stance to such an Enlightenment project it was without rejecting what it understood as the ideals or ambitions of the Enlightenment, while also seeking to extend these as an impulse through a dialectic. From this perspective, it could claims that Foucault's concept of power could only extend its discourse in "a prejudiced way."⁶ The Critical perspective likened this to a form of history simply grounding a "naturalistic theory of society," it is because is already a problematic legacy of humanism in modern social theory.⁷ The controversy which surrounded the category of power emerged from Foucault's critique of anthropocentric thinking, which he presented as a form of scepticism for displacing a 'nature of man.'⁸ But Foucault also intended to give agency to a new ethico-political discourse which was seen as an ambition for giving tools of analysis for "contemporary dangers" in society.⁹ A later essay on Kant saw Foucault relates this to his own

⁵ See introduction to Fink & Marchand (1979) p1-3

⁶ This was a prejudice claims Habermas that followed the fact that Foucault "never returned to the epistemological role of the clinical gaze," 'Questions Concerning the Theory of Power' Habermas (1987) reproduced in Foucault (1994) p85.

⁷ 'The Critique of Reason as the Unmasking of the Human Sciences' Habermas in Foucault (1994)

⁸ "a positivist attitude with a critical claim," Habermas Ibid p83

⁹ Dreyfus and Rabinow, 'What is Maturity?' Rabinow (1986) p118, see also Bernstein in Foucault (1994) p225

interpretation around the legacy of the Enlightenment dispute, and gives one perspectives under focus in this study.¹⁰

This perspective is characterised by Foucault's relation to his own intellectual development and two models which reached beyond academic interests in the political "crisis of the 1960's." A division within French thought that focusses on what in the early 1930's was introduced by Phenomenology but, according to Foucault, this followed an earlier division, "one that separated a philosophy of experience, hermeneutics, and the subject, from a philosophy of knowledge, rationality, and the concept."¹¹ The theoretical significance for him was in the new confrontation between the new interpretations of psychoanalysis, and a historical legacy of that "great postulate of French philosophy from Descartes to our own time," the subject. An emerging Structuralism supplemented with Foucault's reading of Nietzsche gave him the significance of an idea of human subjectivity as a "limit-experience," which served as the suitable rupture for the formation of his own thought.¹² From the broad context of the 1960's dispute on humanism, Foucault took up a perspective on an Enlightenment Science of Man that followed the historical impetus in the polarities in French thought through the 19th century. His early focus was derived from the 20th century French 'epistemological tradition' which analysed autonomous ambitions behind the diverse forms of scientific reasoning, notably associated with medicine, as they related to the progressive project. Science was understood as the modern knowledge that could perpetually revise its own reasoning and substitute errors with the spontaneity of a new language.¹³ From the

¹⁰ See the essay by Foucault *What is Enlightenment?* Foucault (1997). Also Hiley (1998) p110-114

¹¹ On one side, the filiation of Jean-Paul Sartre and Maurice Merleau-Ponty; and another of Jean Cavaillès, Gaston Bachelard, Alexandre Koyré, and Canguilhem. Foucault (1998) p466. The 1985 revised version published in *Revue de Métaphysique et de Morale* within French philosophy leads Foucault "much further down the timeline, as if the divergent readings of phenomenology were only the symptom of a deeper fracture." Of Bergson he writes "doubtless this cleavage comes from afar, and one could trace it back through the nineteenth century : Henri Bergson and Henri Poincaré, Jules Lachelier and Louis Couturat, Pierre Maine de Biran and Auguste Comte." Foucault (1994) vol. 2 p764.

¹² "What struck me most in Nietzsche is that for him, rationality of a science, a practice or a discourse, is not measured by 'truth' it is in a position to produce. Rather 'truth' itself has a share in the history of discourse, and in some way has an internal effect on discourse and on a practice." Foucault (1991) p62, also p55- 56. For Foucault, a new historical perspective on scientific man emerged along with the historical origins of a science to be "found precisely in this reciprocal genesis of the subject and object." Ibid p63

¹³ Canguilhem's suggestion in Rabinow (1986) p88-89

legacy of Alex Koyré, Gaston Bachelard, and Georges Canguilhem, Foucault followed a critical evaluation of an emerging history of shifting norms.¹⁴

Foucault characterised these two models as ultimately reaching the political “crisis of the 1960’s,” and the first chapter focuses on the ‘death of man,’ brought into sharp focus Foucault’s 1966 *The Order of Things*.¹⁵ But this is read as a perspective on an Enlightenment Science of Man giving the modes of knowledge which Foucault scrutinised through an idiosyncratic reading of Kant. This is a framework through which the early Foucault describes Positivism’s status as emerging from pre-critical thought fuelling perpetual controversy extending behind European thought in the 19th century, a failure was summed up an aspiration to be a technical philosophy extending to general functions in society. His narrative disrupts the ground for the socio-political projects drawn from a French medical experience during the early 19th century and this chapter shows why he reflected on the legacy of the ‘new positivities’ through an epistemological analysis. As a critical perspective this served a wider historical dispute on man as it appeared in its contemporary form. Later, his ‘felicitous positivism’ served a special epistemology for conceptualising man’s world through Foucault’s concept of power and later technologies of the self.¹⁶ The positive and the vital, however, give a genealogy which does not exactly correspond to Foucault’s models.

The context for the positive and the vital follows the later commentary by Gilles Deleuze which notes the contradictory role that Positivism occupies for Foucault’s early Archaeology. He identifies Xavier Bichat as the notable distinction informing a dynamic mode of thought emerging around the life sciences. In Deleuze’s commentary, Bichat’s practice largely functioning as a substitution for the neo-Kantian elements that he saw in the epistemological Foucault.¹⁷ Foucault singled out Enlightenment physiology as becoming truly transformed in the

¹⁴ Outlined by Foucault in ‘Life: Experience and Science’ Foucault (1998) p465 the modified form of the introduction to Canguilhem (1989) p9

¹⁵ This ‘crisis’ follows the theme of the interviews where Foucault discusses his own development during the 1960’s in response to a wider social climate, Foucault (1991) p58, p78, p88-92.

¹⁶ Foucault (1997) p124-125

¹⁷ Deleuze (1988) p127 the curious reading of *The Birth of the Clinic* in which Deleuze aligns Xavier Bichat with Spinoza. Ibid p63. Bichat is also pivotal in George Canguilhem’s influential text *The Normal and the Pathological*

modern era and *The Birth of the Clinic* indicates Bichat as initiating an epistemological shift in French thought at the start of the 19th century where pathological anatomy gave a determinable measure for the historical concept of the life. This was understood to mark a limit to naive epistemologies of an Enlightenment Sciences of Man. In France, the naive Positivism was eclipsed after the 1870's, notably with the experimentalism of Claude Bernard who gave the new paradigm for physiological thought. But Foucault's later positive approach looked back at the Enlightenment Science of Man as a significant parallel appears during the 20th century around the new genetics in serving to give a new context for how biological debates could be oriented wider social arguments through an open concept of life sustaining and integrating error.

The first chapter explores how Foucault's theoretical perspective on an Enlightenment Science of Man is derived from an early reading of Kant's *Anthropology from a Pragmatic Point of View*. It looks beyond his reading of the 'death of man' as Kant served as the original approach for his era by giving the critical reflection on man's world. Foucault also held this perspective on the dissolution of the Enlightenment ambition, when he developed an alternative model to a critique of reason through the socio-political forms of a concept of power. It follows Kant's positive ambition beyond the Critiques. By contrast, Gilles Deleuze identified a dispersion of an Enlightenment Science of Man from within the French medical discourses following the 'era of political constitutions.' This gives a different orientation with respect to a 'certain idea' which Deleuze interpreted as Foucault's 'micropolitics.'¹⁸

The theme of the positive and vital indicates a knowledge that straddles the dissolution of the 18th century discourse on the physical and the moral. In this respect, the medical sign was a radicalism: both Foucault and Deleuze followed Nietzsche in a "belief in the body is more than a fundamental belief in the soul," but this distinguishes itself around interpretations of early Positivism.¹⁹ What Deleuze saw in Sensationalist epistemology behind Enlightenment medical practices, was a technical use of the sign for a phenomenology of life which he linked to a specific interpretation of vitalism. Bichat represented this modern struggle for the concept of life

Auguste Comte and the Broussais effect' Canguilhem (1989) p61-62 where Bichat functions in the similar way as he does in Foucault's *The Birth of the Clinic*, which is not the context indicated by Deleuze.

¹⁸ Deleuze (1988) p121

¹⁹ Nietzsche (1967) sect 491

that looked historically to physiology for the knowledge to serve civilisation. His rational physiology took a domain of nature as the ‘sum of the functions’ attributed to life for a *res extensa* where the function of the sign was to indicate what constituted vital and positive phenomena. The function of the sign was that which Deleuze associated with his own ‘delicate problem’ of constituting the positive concept.²⁰

As a philosophical problem, Deleuze was looking to distinguish between an empirical conditioning and an epistemological conditioning. But this also defines what was at stake for a Science of Man that drew on the practice of physiology: it distinguished itself from a metaphysics of subjectivity as the 18th century concept of the ‘organic machine’ brought into question what constituted a sign of the vital. During the early 19th century the physiological model served to ground Positivist ambitions in mapping a domain of knowledge whose legitimate evaluation could extend to socio-political theories. What was historically constituted under the values of the positive and the vital was disputed in the 19th century following the legacy of an Enlightenment Science of Man and left an inherent instability evident in late 20th century and leading to the ‘death of man.’

The second chapter explores a perspective on an Enlightenment Science of Man as it appears through reading of Kant. This frames the Science of Man as a project derived from Renaissance humanism, understood in the Enlightenment as driving the development of new philosophical and scientific languages as the creation of man’s higher faculties. Christian Wolff was significant in this regard, and after 1740 it was the Berlin Academy that was engaged with a series of extended debates on such ambitions. Along with the problems introduced by Locke and Hume this gave Kant the impetus that developed as his transcendental philosophy. This chapter will look at the transcendental ambition from the perspective of Kant’s late *Anthropology* since it was central to Foucault alternative model to a critique of reason.²¹

²⁰ Deleuze (1994) p13-16, p98, Deleuze (1983) p53, and Deleuze & Guattari (1994) where Bichat is specifically the example, p161

²¹ Wolff’s systematic philosophy considered Newtonian philosophy as scientifically narrow. It marks the initiation of the long running debate around the Newton-Wolffian controversy at the Berlin academy from 1740.

A Science of Man relates to Kant's transcendental ambitions of relating a concept of rational metaphysics to an 18th century motif of power. But it also led to his divided strategy. He questioned earlier ambitions for establishing a legitimate science function to sustain a scholastic psychology through concepts of sensibility, while also expressing an allegiance to its broader ambitions.²² By questioning the epistemological 'modes of thinking' that distinguished between metaphysical and philosophical foundations in a domain of experience, he gave conditionality the dissymmetry that extended to the very possibility of a Science of Man. But this also gives Kant's broader ambitions for a general metaphysics seen as the 'indispensable service' of giving legitimacy beyond conditionality and substitutes for an earlier ambition for a Science of Man.

Kant's engagement with a Science of Man was defined by the epistemological problems of representing man's world as a logical system of concepts. This is the context in which the late *Opus Postumum* maps out shifting relations within contemporary life sciences of the era. From this Kant distinguished two modes of what the concept of nature hoped to apprehend; it defined an experience of organic nature under an interpretation of vitalism, but also the broader phenomena that made living nature evident as a world-system. *Opus Postumum* explored these epistemologically as a synthetic capacity to theorise the natural world phenomenologically. Kant followed this by hypothesising the 'ideal archetype of man' whose empirical disposition could think this transcendental world conceptually.²³ *Opus Postumum* gave a transcendental system as a way of thinking the physical and the moral concept united in one domain, but this complicated his earlier opposition of nature and freedom from the critical perspective.

This frames the late Kant and informs the *Anthropology*. This perspective on man's ways of being now took this as an engagement with social, political and historical elements in the world. Although evidently excluded from an anthropological domain, this is Foucault's reading of Kant's citizen, following the cosmopolitan archetype whose engagement with a world-system is dominated by history and culture. This took the complicated transcendental perspective of *Opus Postumum*, but in *Anthropology* man could only 'by rights' become conscious of the system.

²² Foucault's point to the cosmopolitical ideal in Kant (1974) p251

²³ Kant models this on an ideal of the physical (theoretical) as well as the moral practical reason united in one sense object. Kant (1993) p284n

This deliberately left a tension between moral and the technical practices for an empirical consciousness and the transcendental idea was judged as temporal ‘principle of the future.’ This is what parallels the displacement of a Science of Man in the post-critical Kant.²⁴ Anthropology introduced a world-concept which could only be brought into play historically in an empirical domain of competing discourses on the physical and the moral: this appears as what the French Enlightenment tried to define this around the positive of the vital.

The third chapter then depart from the categorical thinking of Kant to examine how the French Enlightenment looked to constitute a Science of Man. The positive and the vital will now define a separate genealogy. This draws on the significance for this era of the progressive anatomical studies in its relation to the 18th century discipline of physiology as it mediated the domain of medical knowledge. Physiology followed a philosophical debate within French medical circles, notably around the Montpellier school of medicine, where a neo-Hippocratic dynamism served the study of vital phenomena. By the late 18th century, this was supplemented by the technical discipline influenced by Condillac’s *Logic*, understood as the successful method for developing logical functions in a progressive way.²⁵ In this sense, the sign aimed to approximate sensible origins as a naturalism put under the test of experience. This semiotic practice, rather than a doctrine of thought, was an influential practice for scientific disciplines during this era, notably for a historical doctrine of physiology which extended to a Science of Man and its social and political discourses.

The chapter shows how new anatomical studies confronted the physiological discipline and its historical idea of living being. This also follows the significance of employing Condillac’s sign as the post-Cartesian theory mediating the understanding of sensible phenomena according to a visible mean. It is examined in what Ideologue Jean Pierre Cabanis took to extend wider discourse on the physical and moral, but it is Xavier Bichat who had the significance of developing a rational discourse of the body to ground the synthesis of a new localised anatomy. His rational physiology was subject to interpretive difficulties in delimiting a natural state. Bichat’s distinction came from using the technical use of sign through the observation of disease

²⁴ Kant (1974) p206, p237ff

²⁵ Albury (1979) in his introduction to Condillac’s *Logic*.

to aid interpretation and to ground what constituted the positive and legitimate knowledge of life. Although rational physiology was theorised according to purely physical conditions, its aim was explaining the fluctuating sum of vital powers that necessitated a reasoned living norm. Bichat's concept of the habituated body was seen under a constant struggle for a 'mean' and had a significant impact on a revolutionary era Science of Man in France. Bichat grounded an idea that modern society could delimit certain functions around the 'state of civilisation,' through a concept of distinct physical powers that 'preside over exterior bodies.' This was a model which also had a significant impact on early French Positivism.²⁶

At the start of the 19th century, Bichat exemplified the relation between an investigating anatomist and the synthesizing physiologist. The fourth chapter describes how this grounds early French Positivism: firstly in Saint-Simon's ambitions for a new Science of Man understood as the necessary synthesis informing a provisional and relative understanding of the forces of history on society, secondly in Auguste Comte, whose Positivism stood against frivolous defenders of an outmoded Enlightenment Science of Man. Both saw Bichat's physiology as the modern knowledge legitimately delimiting forces evident in life's capacity for organization. Positivism grounded itself through this distinction of biological beings from 'mere' objects, despite epistemological model derived of vitalism lost its status during the early years of the 19th century.

The central problem appears in Bichat's 1801 text, *Reserches physiologique sur la vie et la mort*. Here Bichat was establishing the nature and limit of the force of organisation. Signs of the vital gave the paradigm famously describing life as 'the sum of functions by which death is resisted.'²⁷ The sign made evident the 'natural relation' to such exteriority, not as a quantitative or physical analogue of force, but as an index to functional stability in the conceptual mean. Pathology served the method of analysis by extending subjective techniques over the legacy of a historical physiology - to rationalised life's functional capacity according historical interpretation of significant phenomena meant Bichat was looking to Montpellier vitalism, and its neo-Hippocratic dynamism, to uphold the heuristic values of medicine, rather insisting on an

²⁶ Bichat (1827) p34-40

²⁷ *Ibid* p10

apodictic new science. In this way, the Sensationalist sign serves to rarefy values attributed to life, while pathology delimited a new positive knowledge - less as knowledge of man than function of living. But this was inherently problematic since its observational practice was limited to historical understanding of vitalism and its disputed explanations of life.

The chapter takes the 'age of Bichat' to mean the vitalism as practiced in the medical disciplines whose intrinsic values were the positive and the vital a priori to the sign. It is a practice which influenced early Positivism despite the fact it was moving beyond the physiological debate. After 1814, Saint Simon looked to re-invigorate a Science of Man for the socio-political crisis of the time, but this was primarily taken up as an aesthetic concern mediated through the language debate of Louis de Bonald. Saint Simon was also looking to the sciences of the day which now saw him describe society as facing forces that could 'plunge the human species back into the state of nature.'²⁸ This was implicated by the new anthropology with theories of animality, degradation and 'aboriginal difference' which opened the central ontological problems of innate difference in early 19th century biological sciences. Saint Simon's new ambitions for a Science of Man took the form of a synthetic knowledge that could relate to forces dominating history, an idea which was primarily a socio-political concern. It becomes clear after 1814 that his concern to uphold these ambitions became overtaken by the 'industrial values' that could express man's inner drives, now become a class struggle. These values now appear as a 'concept of labour' and describe excessive material force, something psychic, against which idlers seems destined to enfeeblement and death.²⁹

The contention is that Saint Simon's concern with the concept of labour was to support core values understood of a Science of Man. But Bichat's physiology equivocated between a progressive theoretical stance and its ambitions as a discourse on the body. This became superseded after 1916. On the one hand, Maine de Biran was directly critical of Bichat's physiology for giving a misleading account of subjective functioning of the ego, a psycho-physical parallelism that assumed naturalistic functions as a positive knowledge of man.³⁰ On the

²⁸ Saint Simon (1966) XL p254.

²⁹ The work around 1819 with Auguste Comte in *L'Organisateur*. This thesis chapter 4.

³⁰ Maine De Biran (1949c) p39-40.

other hand, Auguste Comte took up his Positivism through an epistemological analysis to avoid spurious philosophical claims to a Science of Man. *Cours de philosophie positive* contends that Bichat's ambition to constrain knowledge to regions 'proper to living bodies' and was a 'truly philosophical' revolution.³¹ However *Cours* reveals a curious relation to Bichat; he is seen as exemplary in the field of method, but leaving an 'incomplete Positivism' open to a regressive metaphysics.³² According to Comte, Bichat's vitalism was lacking because it was premised on a concept of resistance rather than a concept of integration. This identified the historical role of physiology as following the hierarchical perspective on anatomical studies to which Comte's Positivist enterprise was a 'mapping.' It demonstrates a structural thinking that overtook the 18th century debate over a Science of Man. But the paradox of Comte's Positivism is its polemical intent of furthering an ethico-moral project through the new biological sciences having displaced Bichat's pathological perspective and its doctrinaire equivocation of the sign along with its question of values. This was something Comte's philosophical agenda avoided, despite remaining close to an 18th century Science of Man in many other ways.

The last chapter will finally consider the impact of a new experimental medicine in France on the period after 1870. Claude Bernard gave the new positive paradigm that clearly distinguished between medical practice and determinable science. The significance for French philosophy in the Third Republic was that this fully distinguished scientific medicine from a philosophy of life with an impact on both spiritualist and rationalist philosophical traditions. The chapter looks at how François Magendie re-oriented physiology's central problem of apprehending 'true function' in the study of the living. This ambition was to displace an older medical knowledge of life which also appears as a 'paradoxical link' with Bichat's method. To focus on the delicate nature of the experimental procedure as true function now meant rethinking 'conditions of existence' for a concept that could affirm only functions attributed to life. Magendie redefined a phenomenology of living function, avoiding Bichat's pathological perspective and substituted his observational method with an experimental conditioning. The limited domain of an inner living environments, internalised positive and vital values within a separate and autonomous domain of physiology.

³¹ Comte (1893)p298-299

³² Ibid p299

With no ideal notions of normal and pathological states, and radically separated from the historical physiology, this chapter examines an assessment by Henri Bergson who noted this experimentalism was following Aristotle's positive method for internalising alterity in the logic of nature within the understanding of man. Physiology's autonomy accords with the line of thinking that privileges phenomenal relations derived from empiricism prior to historical discourses. Bergson saw Positivism as the failure to retain this empirical perspective on scientific problems, but the late essay written for a conference on Claude Bernard describes the experimentalist's disposition as a suppressed vitalism.³³ This meant not separating empirical observation from its theoretical synthesis. The significance of Bernard's anticipative idea is that this was understood to represent the positive and vital elements that Bergson held necessary of empirical activity in its orientating function. Both Bergson and Bernard aimed for particular precision in their methods but this chapter considers Bergson's focus on an adaptation between positive experience and vital intelligibility as the basis of his theory of psycho-physiological states. By reintroducing the problem of the normal and the pathological, through distinguishing between 'norm' and 'real,' he returns to the evolutionary paradigm of the day for the wider philosophical context. This confronts Positivist historical formations with a true or false divergence and served a critique of post-Enlightenment science seen as carrying the deeper implications of an older practice around Science of Man.³⁴

Bernard's interior milieu gave the ideal model which was also the starting point for constituting the "new way to a Science of Man" in Emile Durkheim's sociology.³⁵ Durkheim's social formations equated to an autonomous domain of free and independent life, through evident loosening metaphysics of the past, and upheld the possibility of determinable relations of the alterity intrinsic of a social logic. But the question is whether Durkheim's neo-Positivism followed a break which Bernard effected with vitalism? Through the conditions of existence that substituted social fabric for the historical idea, he looked to map possible origins of an associative function. This serves his account of historical order through evidence of an earlier

³³ Bergson (2002) p202

³⁴ Bergson (1944) p387

³⁵ Durkheim (2001) p342

lack. An objective synthesis expressed as a collective order of things, followed the potential presupposed of pre-scientific forms of logic. These were open to the intervention according to a special positive reasoning, notably distinct from an individual's logic. Durkheim identified this with a primary categorisation of the sacred and the profane; the potential for autonomy represented the vital capacity to invest and positively ground new norms.

Durkheim identified the system of signs and its potential with what an earlier epoch's protected under a notion of the theological, and later a philosophical project, and this reflected Durkheim's ambition to follow the perspective through relations to an Enlightenment project identifiable in the notions of the positive and the vital. In the capacity for 'fluid' forms of intelligibility which was held evident behind the phenomena of *dérèglement* and *anomie* has the significance appearing through treating sacred representations as profane and vice versa. Here it is the loss of positive knowledge that indicated the vital problem of 'norms' for modern societies. Durkheim described social assemblages without stabilised and definite knowledge of the normal type, but that could, if properly interpreted, "tell us the secret of the future."³⁶ This was the open ambition to constitute a functional knowledge extended beyond scientific methodology while taking its perspective from an Enlightenment project for the constitution of a Science of Man. This chapter shows how this was no simple humanism but had links to the post-Cartesian practice which had no clear idea of what man was.

The thesis gives this genealogy as a perspective on what the late 20th century attacked as stable notions of man, and is pivotal for a contemporary thought understood of the 'death of man.' Foucault dismantled this as a progressive ideal in *The Order of Things*, but this was already under dispute from the 1930's. Positivism was already the target of Critical theory which is exemplified by contrasting interpretations over an Enlightenment Science of Man. Positivism in this era meant a range of practice, from a reconstruction of scientific languages developed as a broader linguistic philosophy, to the broader theoretical approach to science and its methods, to be incorporated into socio-political thought.³⁷ During the 1960's the Critical dispute focussed on

³⁶ Durkheim (1959) p244

³⁷ The arguments collected in *The Positivist Dispute in German Sociology* Adorno (1976), intro pxxxvi ff. Specifically described by Horkheimer in 'Traditional and Critical Theory,' 'The latest attack on Metaphysics,' and

what the Positivist legacy failed to account for in socio-political practices by claiming that its critical horizon was substantially restricting a domain of modern knowledge. In this way, the claim was that it was not true to the Enlightenment ambitions.³⁸ This study gives a genealogy of the Science of Man that does not start from a humanism but through delimiting values which were historically resistant to being the determinable object of study. This moves in parallel to what was framed as the 19th century ‘death of man’ through constituting its field around the positive and vital.

‘Post script.’ Horkheimer *Critical Theory* (1972). For an account of Logical Positivism, Rudolph Carnap’s work as described in Radnitsky (1973)

³⁸ Exemplified by Marx, Weber and Durkheim according to Adorno (1976) xxvii - xxxiv

Chapter 1: A “Rarefied Positivism”

Introduction

The chapter takes its title from Gilles Deleuze description of Michel Foucault’s early work, the early engagement with the ‘crisis of the 1960’s.’³⁹ The “rarefied form of Positivism” refers to Foucault’s interpretation of a historical dispute over the legacy of an Enlightenment Science of Man. In this chapter, Foucault’s interpretation is contrasted with what Deleuze called the ‘delicate problem’ of constituting a positive concept. In Deleuze’s commentary on Foucault, this was associated with a historical event described as ‘the age of Bichat,’ and the chapter will outline how these two contemporary discourses took their perspectives from an interpretation of what an Enlightenment Science of Man intended. This will constitute the basis for the historical work in subsequent chapters.

From the early 1960’s, Foucault’s epistemological analysis served the critical function of humanistic discourses. After 1970, a self-declared ‘felicitous positivism’ developed a concept with which to describe socio-technological orders of power. The chapter reads Foucault’s positive ambitions from the perspective of his early reading of Kant’s *Anthropology* framed as the theoretical context for an original approach to an Enlightenment Science of Man at the end of the 18th century. This also served Foucault’s *The Order of Things* seen as narrating the dissolution of Enlightenment ambitions for positive knowledge through a critical reflection on the legacy of the human sciences. The chapter makes the connection between what Foucault absorbed from Kant’s original approach and his later use of the concept of power for narrating socio-political discourses. In this way, what is to be understood as a Science of Man is delimited through Foucault’s perspective on the dissolution of the 18th century ambition. His positive ambition in later works substitutes for this and this chapter will relate this to his biopolitics. The consideration of populations sees Foucault implement the concept whose autonomy remains close to Kant’s positive ambition, namely relating a universality of knowledge, intended as a freedom from socio-hegemonic contexts.

³⁹ The crisis is the theme of the interviews collected as *Remarks on Marx*, esp p58, p78, p88-92

A second perspective appears by examining Gilles Deleuze commentary on Foucault. He claims ‘a certain idea’ haunted all his work, extending an idea behind Foucault’s micropolitics of the sign, which he identified with the ‘age of Bichat.’⁴⁰ This claim that Deleuze makes of the ‘Bichat event’ also indicates the wider ambitions to legitimate socio-political concepts. But this is centred on the ambiguity of medical physiology, the dispute over vitalism and its ambition to apprehend true function. Deleuze relates this to Nietzsche’s ‘delicate problem’ of constituting a positive concept through an empirical conditioning.⁴¹ The chapter draws out the context of Bichat’s medical vitalism as following techniques of evaluation posited of the sign. These relate to the distinctly post-Cartesian practice attributed to Condillac.

In this way, the theme of the positive and vital will differentiate a knowledge that straddles the dissolution of the late 18th century discourse on the physical and the moral. This question frames the ambitions of an Enlightenment Science of Man. In this sense, Xavier Bichat’s physiology opened a domain of nature to a logic of man; a *res extensa* as sum of the functions of life. To constitute positive phenomena of life was a question of method and significantly Bichat’s vitalism was not a metaphysics of subjectivity but related to the 18th century concept of an ‘organic machine.’ It is also significant that Bichat’s physiology left a historical legacy for 19th century French Positivism. Hence the vital and the positive give the terms that delimit an inherited dispute from an Enlightenment Science of Man, explored in this chapter as perspectives on the ‘crisis’ of the 1960’s. Both Foucault and Deleuze shared Nietzsche idea that a “belief in the body is more than a fundamental belief in the soul,”⁴² but by questioning what constitutes phenomena of the body in Xavier Bichat, Deleuze is seen as presenting a historical parallel to the theory of knowledge derived from Kant.

⁴⁰ Deleuze (1988c) p121

⁴¹ Deleuze (1983) p53. See also Deleuze & Guattari (1994a) p161 where Bichat is the specific example.

⁴² Nietzsche (1967) sect 491

Archaeology as a 'Rarefied Positivism'

When Gilles Deleuze described Foucault's early work a 'rarefied Positivism,' it was intended as a double edged critique; the negative sense of a transcendental stance of an "urdoxa."⁴³ But it also implicated certain positive ambitions as deeper formulations of conceptual thought that his commentary would reveal. According to Deleuze, this only became apparent with Foucault's reevaluation of the normative aesthetics 'of the body.' His early Archaeology was confused in its ambition, a negative practice that simply fell short of any 'true critique.'⁴⁴ Deleuze could define 'true critique' as the measure of conditions for knowledge, rather than of the conditioning of knowledge which he specifically identified with scientific epistemology. This distinction was made explicit in his own idiosyncratic reading of *The Order of Things* which he subjected to his own Nietzschean 'symptomatology' of 19th century practices. In the original text of *The Order of Things* the central problem is posited through its survey of relations between being and language which serves to question as a historical *a priori*, the subject of knowledge. But Foucault's subsequent transition, notably following a history of populations, also appears in his ambiguous relation to a philosophical anthropology; -

"anthropology constitutes perhaps the fundamental disposition that has governed the path of philosophical thought from Kant until our own day. This arrangement is essential since it forms part of our history; but it is disintegrating before our eyes..."⁴⁵

What he maintained through subsequent analyses of the constitutive conditions under which subjects could be formed and modified, was the extension of these conditions into a socio-political domain through an analysis of power.

From the early 1960's Foucault used epistemological analysis as the critical reflection that targeted a concept of man's world by foregrounding a historical study of discourse. *The Archaeology of Knowledge* describes this as a rationalising process from which an 'unthinkable' had be removed. Archaeology located a specific problem around the difficulty of the 'subject of

⁴³ Ibid p13, the note at p320 refers to this model which normalises the visible in Foucault. For 'urdoxa' see Husserl (1962) p103-104, see also Deleuze (1994b) p137

⁴⁴ Deleuze (1988) p52, contrast with Habermas comments who makes the opposite claim, namely that Archaeology is erudite and Genealogy is of suspect legitimacy, Habermas (1987) p248.

⁴⁵ Foucault (1970) p342

knowledge' and developed its method by following epistemological "continuities to define their discontinuities."⁴⁶ The significance of these "positive elements" gave his analysis of history its intended break with continuous history. Continuous history was equated with the "founding function" of subjectivity, a function understood as indexing an origin with its necessary image of development, serving to exclude dissociation and difference. A dynamic analysis of structural formations in the history of ideas was, therefore, to exclude an idea of origin⁴⁷ Foregrounding discontinuities served to inform a theory and method that positively aimed to distinguish knowledge from an intuition.⁴⁸

Foucault's discourse studies aimed to elide both socially determined and autonomous individuality. By suppressing this 'anthropologising function' as the tendency of the empirical field, discontinuity events indicate the spontaneity of new concepts.⁴⁹ The basis for this was that the ego functions to hide the synthetic activities of the subject. The image of transcendental history that emerges is of dispersive and divergent series of knowledge. Spontaneity is associated with transcendental understanding in its polemical function which displaces an anthropological style discourse. A polemical strategy battles against an ideology of "preconceptions, resistances obstacles," to give a perspective on the constitution of subjectivity through discourse.⁵⁰ *The Archaeology of Knowledge* was following an epistemological method developed under Alexandre Koyré and Gaston Bachelard. It was the latter to which Foucault attributed the study of epistemological thresholds through which scientific praxis appears as the significant product of conformation of human logic to a concept of the world.

In this sense, Foucault took up his perspective from within French intellectual history by drawing on the early writings of Bachelard. Bachelard's motivation was explicitly against the legacy of Bergsonism and the ontological status of duration taken as 'real' time.⁵¹ Bachelard identified a

⁴⁶ Foucault (1972) p13

⁴⁷ Ibid p8

⁴⁸ Ibid p182

⁴⁹ Ibid p186-187, also p192

⁵⁰ In Foucault (1972) p4 there are four figures, Gaston Bachelard, Georges Canguilhem, Michel Serres and Martial Gu eroult, but in the essay *Life: Experience and Science* he claims Koyre and Bachelard are the forerunners of an epistemological tradition which Canguilhem takes up. Foucault (1998) p471

⁵¹ Bachelard (1935) originally 1932, and Bachelard (2000), originally 1935,

philosophical task as bridging two elements between which Henri Bergson had drawn a distinction; philosophy and positive science, or the intuition and the instant. Here was a gap into which Bergson had introduced his idea of duration. The reason for this was that, Foucault reflected Bachelard's philosophical ambition to oppose an ontological approach to philosophy. Three points historically situate the Archaeological strategy in its ambitions of extending the rigorous function of the concept.

- The primary criticism that Bachelard held was of Bergson's conception of 'nothing.' This is articulated in Bergson's *Creative Evolution*. -

“The problem of knowledge is complicated, and possibly made impossible by the ideas that order fills a void and that its presence is superimposed on its virtual absence. We go from absence to presence, from void to the full, in virtue of a fundamental illusion of our understanding.”⁵²

Bachelard comments that by the *pansychism* transformed into a *panchronism*, a simple continuity between states of Being avoids any threat of true nothingness, namely the void. Bergson's positive metaphysics were an “ingenious theory of negative attribution,”⁵³ which, according to Bachelard, flattens positive possibilities for higher human thought. Bergson saw in memory the possibility of unifying discontinuities in knowledge; Bachelard insisted that bringing the possible and the probable into an idealistic continuity did not necessarily bridge a gap in Being. Rather, an undisputed positive value attributed to a plurality of life represented a frivolity.⁵⁴ In this sense, Bachelard characterised the danger of misrepresenting the functional nature of a correlation between words and their translation into a ‘language of action,’ the sign and its idea.⁵⁵ A truly negative action means a non-function and implies the possibility of extinction, while a positive function attributed to thinking plenitude behind the intellect, takes on the ontological value of a true function in general. Archaeology opposes this.

It opposes it because this was the passivity that Bachelard attributed to thinking a continuous history. The problem of such passivity was carried in an idea, into which his epistemology

⁵² Bergson (1944) p299

⁵³ Bachelard (2000) p25

⁵⁴ Ibid p27

⁵⁵ Ibid p30

introduced conceptual lack. Against this, he attributed active construction as necessary for productive new functions in knowledge. New concepts were understood to be intellectual products by Bachelard who followed a scientific disposition to make a claim on the world by developing experimental ideas. His reason for opposing Bergson's force of the unconscious, was its ontological base. Foucault's discursive discontinuities inherited this opposition in the discourse of negative attributions, particularly in undisputed positive values attributed to a plurality in a concept of life.

- Secondly, Bachelard foregrounded an idea of an objective synthesis. One justification for this was from Henri Poincaré who claimed that mathematics had reinvented itself. It was, he wrote,

“making itself over...by means of a revolution...in some sense the opposite of the Cartesian reform. Before Descartes, chance alone, or genius, made possible the solution to a geometric problem. After Descartes we were in possession of infallible rules for obtaining results”⁵⁶

As a new active ‘method of discovery’ this substituted for a speculative positing; Bachelard called the latter a ‘method of solution.’ Poincaré was proposing that a new mathematics of complexity could present new synthetic concepts to that surpassed a primitive science of spatial measurement and renewed the ambitions for a true ‘science of relations.’ Bachelard took this as extending a critical domain of scientific objectification and Foucault took this up as a technique of critical historicism.

- Thirdly, Bachelard followed Pierre Janet's later criticism of Bergsonian ‘psychology.’ Janet opposed the ‘plenitude’ with a ‘psychology of commencement.’ The importance was placed on the event of commencement in thought to limit its effect. Bachelard could in turn write, “we need the concept of the instantaneous in order to understand the psychology of beginning.”⁵⁷ The psychology of beginning drew on Janet's idea of memory being a ‘social’ function aiming to ‘triumphing over absence;’ memory held a continuity where there is no reality as such.⁵⁸ Janet maintained that the idea of memory manifests the higher functions when given through the word,

⁵⁶ Poincaré (1910) cf Bachelard (1984) p164

⁵⁷ Bachelard (2000) p59

⁵⁸ Janet (1928) p22, cf Bachelard (2000) p61

“the first populations were delighted by all these accounts by victories and of defeats, they were affected; it is the third period of the memory, the period that we called fabulation.”⁵⁹

The power of fabulation extends memory and captivates through literature and poetry. It gives memory power, not to be understood as forms of the spirit, rather as a power of construction. This distinction leaves human knowledge - its objects, people, space and time – in need of a transcendental perspective on its constructions, although this represents a departure from an idea attributed to nature in general. Foucault’s discourse studies followed a historical idea as the fabulation or construction, but these represented an epistemological object to any evident deeper nature of man and his concept of world.⁶⁰

Through questions of function, method and power, Foucault’s structural analysis followed a strategy that drew on the radical shift in the psychology of scientific thinking. Bachelard had described contemporary sciences as transforming the orientation of its ‘epistemological vector,’ a new orientation moving from the idea towards the ‘real.’ This paradigmatic shift looked to bridge realistic and rationalistic modes of thought and represented a significant break with earlier Positivist models that assumed a sum of experience of the ‘real’ would move towards a transcendental idea of nature. A new realism, limited to the products of scientific experience, is illustrated, for example, by the physiology of Claude Bernard who distinguished his concept of scientific epistemology from that of Auguste Comte. Bernard accepted different modes of human understanding while refusing an interpretation that viewed these as historical progress. He refused this on the basis that science was necessarily stood as a distinct form of knowledge from philosophy; this was a distinct break with a historically rationalising form of science. He characterised this as two ways of writing history; firstly, an internalising way, accumulative or scholastic, and secondly, a functional way, externalising an immanent perspective on the activity that produces it. Through his own method, Bernard saw the new task as freeing human knowledge from the ideological tendencies of a human mind encysted in systems of thought.⁶¹

⁵⁹ Ibid p107

⁶⁰ Bergson (1935)

⁶¹ Bernard’s formulation (1956) p223. see also Petite (1987) pp201-219, also Hirst (1979)

The polemic of the epistemological method aimed at a corrective to narrow ideologies by opening these systems to a critical reflection.⁶²

The critical task of Foucault's Archaeology was, by extension, an analysis of the utility of ideational structures. The philosophical disposition was that of an ethics that would actively hunt diversity beneath identity opening thought to the autonomous concept.⁶³ The reflection that appears in *The Order of Things* brought this out from the point of view where new rules of discourse come into play, and whose function extends through a history of the sciences of man. This was an analysis aimed at the internal economy of scientific discovery. It served to implicate, as Foucault later said, "what has eluded consciousness,"-

“ [it] describes the unconscious of science, the negative side of science as that which resists it, deflects it and disturbs it. What I would like to do, however is to reveal a positive unconscious of knowledge: at a level that eludes the consciousness of the scientist yet is part of scientific discourse, instead of disputing its validity and seeking to diminish its scientific nature.”⁶⁴

The deeper significance of the human sciences, behind their rules of formation, was in the constitution of a historical practice of subjectivity. This brought out a paradox, the question which Foucault described as "often highly embarrassing," namely of accounting for this higher conditionality of man's world at the conceptual level.⁶⁵

The Concept of Power as the 'Rarefied Positivism'

In the texts *Discipline and Punish* and *The Will to Knowledge* Foucault took a different approach to such conditionality. By introducing a shift in focus to non-discursive disciplinary practices from a broader social perspective, he focussed on histories of human bodies engaged with a "machinery of power." Describing a distributed network through an analysis of power gave Foucault a social perspective delimited through a normalising judgement.⁶⁶ *Discipline and*

⁶² For Bachelard, science is "the aesthetic of the intellect." Bachelard (2002) p21

⁶³ Bachelard (1984) p176

⁶⁴ Foucault (1970) x-xiv

⁶⁵ Ibid xiii

⁶⁶ Foucault (1977) p136-138,p190

Punish introduces a ‘mechanics of power’ to distinguish how new conditions for the life of the body are explicitly related to Enlightenment issues of social and political reflection on a positive knowledge of the individual.⁶⁷ *The Will to Knowledge* described ‘crystalisations’ emerging to sustain a domain of strategic investments. Notably these displaced stricter determinable models of law in the account of shifting social formations that gradually become invested with an order of political power.⁶⁸

Foucault accounts for the profound transformations in the modern era through a socio-political ordering of life where a concept of power serves the productive aspects seen of a force ‘within itself.’⁶⁹ The concept of power distinguished what was earlier attributed to a ‘commencement’ in the epistemological models. The externalised spontaneous form of knowledge has a correlation to an internal capacity of a concept of power. But this appears on the social level and made evident by what Foucault reflected upon as “rights of death.” He claimed that massacres were vital to a political modernity, as the counterpart of forces exerting a positive influence over life.⁷⁰ This indicates that power becomes increasingly the determinable element in the empirical domain, and the concept of power can demonstrate an emerging representational capacity that functions as a mechanism to apprehend ‘biological dangers’ through a productive discrimination. This concept internalises the limits of productivity attributed both to movements of life and the processes of history. Foucault’s ambition for the concept of power was therefore to capture an essential function at the level of societies.

From the discursive perspective, it is notable that Foucault was reflecting on the new genetics in the context of such a bio-logic in the period up to 1970. His review of François Jacob’s *The Logic of Life* described the new genetic discourses that defined chance as an internal limit to a concept of life.⁷¹ This limit appeared as an internal fault and gave a new concept of life which no longer carried fundamental postulates of continuity. In the transcription of codes, errors, omissions and inversions, life had a new concept that was disruptive of the legacy of older

⁶⁷ Ibid p254

⁶⁸ Foucault (1979) p141-142

⁶⁹ Ibid p102

⁷⁰ Ibid p127

⁷¹ The review of François Jacob’s *The Logic of Life* ‘Croître et Multiplier’ in *Le Monde* 1970 and Foucault (1994b)

concept of life in their relation to cosmological ideas of nature; a new discourse on information was of a program whose 'nature' presented the new epistemological challenge to traditional Western doctrines of 'man,' as absorbed within the human sciences. The new technical discourse focused on 'communication' and the arbitrariness of a genetic limit.⁷² It subordinated any individuals terms of natural growth or possibilities for transmissions and intensification of vital 'force' as compensation for the negativity of death, and gave a significant re-modeling of a concept of 'nature' such as those upheld by a 19th century Positivist discourses on energetics.

The consequences for discourses on subjectivity was to present them with a "fierceness of reproduction," as a negativity within the very notion of subject.⁷³ Inserting randomness into the knowledge of living systems moved away from debates absorbed from the 19th century physiological era; genetics had a significance for our epoch which differentiated a new domain for life fundamentally reflecting a potential for absence. The analysis of living being, from the perspective of a program, was limited to the 'encoded,' and constrained within fixed margins of the organism. By situating a possibly inert order at the heart of the living, Foucault pictured an ego as consulting a program from a limited perspective, merely translating a code against the order of the given. Here was an intrinsic limit to any speculative bio-logic in contending with arbitrariness, conversely it offered Foucault certain possibilities for expanding philosophical elements around a concept of life. There are two specific points, -

- This displaced the axiomatic that saw thermodynamics overtake categories of vitalism in the early 19th century debates on life. In the image of life, a negative notion of entropy became a measure of disorder from the point of the whole, this subordinated a lack of knowledge of internal structure. But the genetic analysis of living systems gained information at the local level, to compete statistically with the concept of equilibrium in the image of the whole. Such competing ways of thinking about the nature of life, one an inversion of the other, had consequences for the statistical genetics in displacing any absolute arguments over general definitions of life. Thhis substitute the scientific discourse on energetics with the focus on

⁷² The new mood was captured by the closing lines of *Chance and Necessity* by Jacques Monod (1972) p167

⁷³ Foucault (1994b) vol. 2 pp99-104

biological-history studied as integration of increasingly abstract functional elements whose effects remained to be determined at a higher level.⁷⁴

- By introducing the logic of reproduction, and internalising the concept of the genetic pool, a compelling new dynamism appears in the complexity of biological systems. Grounded by an apparently natural concept, the wider perspective on a genetic communication places the individual program within the wider collective; conversely, an internalised 'natural' death implicates individual genetic death has the necessity attributed to the wider functions of an evolution of the general code. This offers a broadly naturalistic perspective to an idea of evolution limited only to terms of the expression of the pool; in this respect, any ideas of general conservation of life compete against the perpetual revolution within parameters given under the notion of selection. A logic of the genetic program, of which nothing specific is understood, necessitates the interpretation that ascends through various levels of living systems; from genetic element in the individual, to cultural, moral, socio-political, economic, and religious codes. It lends a philosophical privilege to the interpretative power that can situate such knowledge with respect to any wider discourse; its interpretation is open to confrontations with competing accounts of histories of the world since the wider nature now effectively appear buried in unknown internalised principles, and is expressed only in a social space.

The concept of man's world at the level of populations frames the new confrontation between an 'economy of man' and an 'economy of nature.'⁷⁵ But it reverses an idea of life now subordinated to the concept of a 'natural' evolution. Georges Canguilhem was content to describe this as the great gulf emerging with the current information theories of organisation and the explanatory systems of the past.⁷⁶ But Foucault takes a philosophical departure through this method of interpretation at levels of the ego, the social, political etc, which extends through a concept of power.⁷⁷

⁷⁴ See Jacob (1989) p304-305

⁷⁵ Foucault (1994b) vol. 2 pp99-104

⁷⁶ Canguilhem asks "does not information theory have more to say about, in its own algorithmic language about living things than Henri Bergson did in the third chapter of *Creative Evolution*?" Canguilhem (1994) p86-89

⁷⁷ Foucault (1979) 92-93

History of Sexuality follows this as a positive concept grounding the conditions of existence as they were historically developed through a discourse on forces that “could be modified...and distributed in an optimal manner.”⁷⁸ From a “theory of signs, ideas and sensations” as they appeared in the early nineteenth century, came a discourse that facilitated tools of analysis to describe socio-political processes of life - to which a socio-political order derived its perspective of control.⁷⁹ Here the concept of power could serve as counter-function to a disposition for juridical forms of knowledge to apprehend power within a socio-political order; Foucault meant this counter-function to delimit functional criteria attributed to social order by mediating what a bio-logic fundamentally internalised; the counter-function opens to philosophical interpretation around the concept of world at the socio-political level.

Focussing on what this bio-logic internalises for its discourse on life’s potential served Foucault’s ambition behind the coupling of ‘power/knowledge’ structures. The concept of power explains an “agent of transformation of human life” by extending a domain for life in a positive sense.⁸⁰ It served a “point of attack,” open to a substitution, reversing the activity of juridical discourses. Foucault employs this for constitution of subjective relations within the social domain, a positive ambition identified with his socio-political project.⁸¹ Internal lack in a bio-logic made it possible for a concept of power to extend a domain of knowledge, to harness a coupling of power/knowledge seen as an aggression of “egoism turned against one another.”⁸² He framed this as a historical struggle for knowledge and would later return to categories of subjectivity.⁸³

Foucault’s late return to subjectivity took the perspective from an analysis of the rules of discipline in constituting a self. Already in 1970, Foucault indicated that Genealogy was working on the ‘side of discourse,’ through taking power to constitute the domain of objects by following

⁷⁸ Ibid p142

⁷⁹ Ibid p139

⁸⁰ Ibid p143

⁸¹ See the two essays, ‘The Order of Discourse,’ (1970) essay in Adams (1965) p158, and ‘Nietzsche, Genealogy, History’ (1971) Foucault (1998), see also Dreyfus and Rabinow (1983)

⁸² See Foucault (1998) p377, also noted by Dreyfus and Rabinow (1983)

⁸³ From the introduction to *The Uses of Pleasure*, Foucault (1985) p10

a “felicitous positivism” to achieve his positive ambitions.⁸⁴ What motivates this shift can be understood by exploring Foucault’s early reading of Kant’s *Anthropology from a Pragmatic Point of View*. Here the ethical subject was already identified as a ‘doubly’ determined object, under both juridical rules and under a universal moral law. It is a text that has been recognised as the pivotal perspective on *The Order of Things* which in turn can be seen as describing the dissolution an Enlightenment Science of Man.⁸⁵

Foucault Reading Kant’s Positive Ambition

In the early text, Foucault tracked Kant’s positive ambitions through the “three fundamental questions enumerated in the *Transcendental Method*” which he took to dictate the general organisation of Kant’s Critiques.⁸⁶ These ambitions were repeated in his later *Logic* and supplemented by the question, ‘what is man?’ Foucault saw this serving an ‘order of descent’ from historical ambitions from a *mathesis universalis* in the 18th century, through ‘anthropology, metaphysics, morality and religion’ in which Kant pre-empted problems of representation of 19th century. Archaeology takes its relation in this series as the ‘practice amongst practices’ opening an alterity under a concept of nature.⁸⁷ *Archaeology of Knowledge* mapped the admixture of disciplinary knowledge and ideology, indicating relations between empirical rules and transcendental structures, to identify an open limit that specified where an empirical function came into play. This indicated an active struggle operating at the level of the externalised concept. Foucault often gives Nietzschean terms to this struggle, the power extending its disposition for transformation of values, but his target is the internalised qualities of the concept that appear at the level of disciplinary practices.⁸⁸

These internalised qualities gave the context for a thematic exploration of an objective synthesis that culminates with his work on subjectivity. Foucault’s *Introduction to Kant’s Anthropology from a Pragmatic Point of View* describes a text following a central ambition of mapping a life

⁸⁴ Foucault in Adams (1965) p162

⁸⁵ Importance of Kant’s *Anthropology* noted in Didier Eribon (1991) and Beatrice Han in Gutting (2005)

⁸⁶ Kant (2003) p635, Kant (1974) p29, Foucault (2008) p74

⁸⁷ Clinical medicine is one such example. Foucault (1972) p180-181

⁸⁸ Ibid p186

of logic.⁸⁹ This ambition avoids discussions of intuitive essence which corresponding to Foucault's focus on epistemic knowledge. However, Kant's *Anthropology* was also understood as mapping an actuality explored under questions of desire and prudence. This pragmatic element behind the evident strategies of knowledge presuppose what become apparent through the 'network' of human activity: it implicates undisclosed intentions behind the constitution of a system of the world. In this way, Kant's *Anthropology* followed the strategy that deliberately targets positive difference between the concept of nature and an intelligible idea of natural man.⁹⁰

What was intelligible of such an idea was the central problem of the *Anthropology*. The evident objectivity that appears as natural man, can be distinguished into different empirical life practices and seen as different "possible uses of reason." Foucault shows that such an 'object,' rather than having an intuitive 'psychological' nature, is the product of multiple logics which necessitates a principle that distinguishes the diverse epistemological modes that an inner-sense can express as the possibilities of its world. Although Foucault found nothing in the text to indicate what kind of principle accounted for this difference, *Anthropology* revealed a "progressive investment" of man and his world with an "imperious sovereignty," which Foucault speculatively took as oriented towards the theme of Geist.⁹¹

The elements of this sensibility are formed between the following,-

- Foucault understood Geist served ultimately as the function of a universal perspective from which all anthropological experience of the world was pragmatic, and to which a 'nature of reason' cannot be fully determinable. This signifies a crucial apophatic element throughout Kantian thought, which necessitated Critique serving to regulate any positive sensible determinations, i.e. any concepts produced and positively constituted were to be measured against this transcendental 'nature' of man.⁹²

- But this concept was itself the product of subjective freedom. This positive source of representation draws potential from the Gemüt to extend itself and give a transcendental image

⁸⁹ Foucault and Bove (2002) p2

⁹⁰ Ibid p3-5

⁹¹ Ibid p7

⁹² Foucault names this as equivalent to Hume's 'nature of human understanding' Ibid p7

as its virtual ‘potentia.’ However, since *Anthropology* excludes any transcendental perspective, describing only how empirical faculties follow divergent lines, these individual freedoms also have the concrete negative attribute of being open to the possibility of frivolity and error.⁹³ Because Kant necessitated “something a priori in the consciousness of our existence” that can orientate this potential towards the transcendental theme of Geist, Foucault identifies an evident power of organisation with the anthropological domain as its positive horizon of conditionality. This conditionality delimits an anthropology to being the “space of the research of powers in virtuality.”⁹⁴ It indicated the historically positive sense of a Gemüt coming to an awareness of a concept that can be positively constituted through its own self-representations.

Kant’s transcendental concept covered a domain that included all possible predicates, but since the *Anthropology* lacked such transcendental possibility, its necessity appears from the empirical perspective as what could limit itself under a ‘natural’ knowledge. Foucault further correlated this with what Kant’s *Opus Postumum* extended through the wider speculative source of possibilities.⁹⁵ From this, a natural concept meant a normative knowledge of the world which follows from the existential conditions with which any pragmatic idea must contend. Foucault carried this over into his own research as the conceptual possibilities of positive determinations subordinated by the historical world of man.

The historical limit has its relation to Kant’s critical context, as Foucault puts it, by offering the “interrogation of the interrogators themselves.”⁹⁶ Its significance is located in a distinction between differing approaches to time consciousness in *Anthropology* and *Critique*; the anthropological perspective leaves time as no longer intuitively given but as the dispersive negative element to which the wider synthetic combinatory must work against. The combinatory has the necessity of functioning against errors or ‘slippage’ in logic but, conversely, its dispersive nature allows, in an inverted way, an intrinsic space of possibilities to be attained in the functioning of positive practices working against natural ‘slippage.’⁹⁷

⁹³ Ibid p9-10

⁹⁴ Ibid p10

⁹⁵ Ibid p12-13

⁹⁶ Ibid 12

⁹⁷ Ibid p18

This gives values to practical disciplines as the form of the freedom attributed to the knowledge adopted to avoid its own dissolution. But *Anthropology* took this as a positive functional knowledge whose power was attained from the successful reciprocation of phenomena through the exchange of signs.⁹⁸ Strictly speaking, an *Anthropology* saw such this function neither in strictly in terms of a historical tradition nor an extended theoretical technique, but as an open discipline defined only by its successful extension through the ‘logic of an illusion.’ Because this depended on an ‘art of interpretation’ the function reaches beyond any logical principle as it appeared as a natural concept. Since the anthropological domain lacks any transcendental perspective, the context for such a power is the exchange of signs that emerges only through a competition of disciplinary practices. What becomes historically conditioned by compromise and negotiation under an interpretation of the given internalises this disciplinary power, but remains open to a progressive investment whose positive potential for transformation takes the form of a real determination.

There are two ways to read how Foucault contextualises the *Anthropology* text; one where positive empirical practices map an orientation as an idea of world whose transcendental knowledge has the noted in the correlation to Kant’s *Opus Postumum*. But secondly there appears a relation to what Foucault later indicated with the reading of Kant’s *Was ist Aufklärung?*⁹⁹ Kant was seen as taking the function of reason as upholding a predisposition in human nature revealed through the concept that extends through successive ruptures in social formations. Foucault called this the ‘moral’ predisposition to avoid war behind political constitutions and social formations, which appears in the disposition behind spontaneous ruptures of socio-political formations.¹⁰⁰ This stands as Foucault understanding of Kant’s ‘deeper understanding of a philosophical task embodied of an ethos. The significance for the early reading of *Anthropology* is what Foucault carried over a practical task, evident as orienting the new concept that emerges across historical breaks, constitutes autonomous subjects and through

⁹⁸ Ibid p18

⁹⁹ Foucault (1998) p439-440

¹⁰⁰ ‘What is Revolution?’ Foucault (1997a) p96

what Foucault later understood of the disposition to open a “limit attitude” or “frontier.”¹⁰¹ Here was the important element that later saw a return to discussing subjectivity. The historical perspective becomes evident during the 18th century event as a ‘signum prognosticum which ‘haunts’ 19th century thought (“if not all modern philosophy”¹⁰²). This should be taken as reflecting the positive ambitions that form a continuous element in Foucault’s work and give his perspective on the Enlightenment ambitions.

Ideology and Criticism in the Enlightenment Science of Man

This historical break gives the particular context that is framed as an internal confrontation identified with the legacy of the 18th century Science of Man. It appears in Foucault’s *Introduction to Kant’s Anthropology* but also informs what is mapped in *The Order of Things* under the expansion and disintegration of the unified ambitions for a modern knowledge of man. This confrontation with the emerging Positive sciences from the start of the 19th century leaves this text as instructive for understanding how Foucault implements his positive ambitions.¹⁰³ The narrative of *The Order of Things* distinguishes these ambitions on the basis of two departures from the 18th century paradigm.

- Firstly, the Ideological method which is given through sensationalist techniques of representation. These followed aspirations for a new and positive scientific language by a method derived from the classical domain of representation; it analysed through a phenomenology of signs intended to apprehend a new objective knowledge. This was dependant and limited by the combinatory techniques that grounded a subjective practice, notably empirical observation.¹⁰⁴

- Secondly, the approach that was followed by Kant’s Critique reached beyond simple realism. Kant foregrounds questions of subjective appearances as the basis of judgment. Through

¹⁰¹ Ibid p107, p112

¹⁰² Ibid p99

¹⁰³ Foucault later claimed that *The Order of Things* was “not my true book,” Foucault (1991) p100

¹⁰⁴ Foucault (1970) p 240, p241

reflective detachment from physiological specificities of the combinatory, Kant could question of the status of a domain of reason through its conditionality.¹⁰⁵

Foucault was looking to delimit this to a dispute around the specific nature accorded to the conditioning of positive experiences within the practice of representation. Both approaches had ambitions for a universal necessity but the issue was whether sensationalist techniques could sustain a new language as a positive concept; this pivots on whether they simply translated empirical scientific practices into systematised social-political practices. On the other hand, Kant's Critical approach is attributed with bringing out the difficult 'nature' of the combinatory by reference to the negative concept. This carried a necessary conditionality *a priori* to a problem posed of any posited knowledge.

Foucault makes two particular points;

- Kant took metaphysics itself as a functional concept. The *Critique of Pure Reason* draws this sharp distinction between spatial and dynamical relations by localising analogical relations in a specifically Cartesian style physics. This exposed the physiological limits to the scientific paradigm of day. Critique therefore initiated a departure from the 'naïve model' of the positive, identified as the metaphysical dimension of 18th century thought. Archaeology interrogated discourses that naïvely extending derivative concepts into social or moral discourses. The critical reflection on human sciences displaced this for a deeper reasoning; these reasons follow what Kant initially sought to mobilise in his Critique.¹⁰⁶

- The ambition which is central to *The Order of Things* pivots around the discussion of what an earlier Science of Man distinguished between 'human nature' and 'nature' in general.¹⁰⁷ In the emerging discourses of the Enlightenment, a new fundamental opposition around what orders a history, and what disrupts it. New scientific discourses took on the philosophical function of representation which had earlier served to reconcile a split between discourses on nature and man. These gave the positive ambitions within classical knowledge. At the turn of the 19th

¹⁰⁵ 'Anticipations of Perception' Kant *CPR* B207, 'Principle of permanence of substance' A182, B224, 'Principle of succession' A189, B233 Kant (2003) p212, 201, 224)

¹⁰⁶ Foucault (1970) p245-246

¹⁰⁷ 'The limits of representation' Ibid p219

century, scientific disciplines were limiting determinable nature to a designated domain that could contain the specific elements of knowledge. The legacy for an Enlightenment Science of Man at the beginning of the 19th century was to restrict legitimate representational possibilities. This became the positive field which analysis externalised in its relations to man and initiates what Foucault describes as the analytic of finitude.¹⁰⁸

Kant's analytic that brought into focus the conditionality of this conceptually positive domain as it becomes separated from a philosophically positive discourse. It addressed the dispute by introducing a new necessity for distinguishing what constituted a transcendental concept from a transcendental style of understanding of an empirical experience. This new necessity followed a devaluing of metaphysics which emerged as the real problem around an Enlightenment Science of Man.¹⁰⁹ The devaluing of metaphysics initially followed from the ambition for the positive knowledge to substitute for a discursive history across a range of positivistic disciplines. This ambition was to define a transcendental style of knowledge, dependant on what could be positively defined around a knowledge of man. An emerging Positivism in the 19th century extends this ambition through freeing itself from a metaphysical practice of 18th century, but faced the dilemma of a double system of reference; this meant it limited its transcendental perspective with respect to the positive contents of an empirical domain. Foucault shows how such 'new positivities' opened the problem of a necessary empirical compensation, namely, a dispute over what concept could posit a knowledge in relation to its human object. The Ideological method extending through new forms of Positivism implicated a series of practices whose objectivity sustained an anthropological illusion.¹¹⁰ Foucault's history saw Kant's epistemological break as making possible the inverse problem, giving the transcendental ambition of extending a question over the nature of man philosophically.

It is the failure to follow this philosophically which had the reductive consequence that appear in the legacy of the 20th century humanities. In *The Order of Things*, the dense history of these roots of analytic of experience finds a categorical problem as it appears around a priori principles of

¹⁰⁸ 'The analytic of finitude' Ibid p313

¹⁰⁹ Ibid p317

¹¹⁰ On Positivism ibid p348. On the the 'analytic of finitude' Ibid p316. The analytic 'doubles' has been subjected to a close analysis in Dreyfus and Rabinow (1982) p32-34.

coexistence in their relation to 20th century discourses. Foucault later explained that the text was intended as a polemic against the Phenomenological method which upheld ‘scientific’ ambitions without restricting itself to pre-grounded data.¹¹¹ Phenomenology did not follow Positivism’s ambition of freeing itself from metaphysics, and therefore considered its ambitions positive in a different sense; it was to be positive in the sense of taking a domain of experience as the reality to substitute for the limited science of nature. This strategy was pursued through Edmund Husserl’s *epoche* by taking experience of the world as a natural grounding for presenting experiences as ‘real.’¹¹² Husserl gave an innovative description of evident logic and its positive categories of meaning that could delimit a Cartesian style *res extensa* over ego-experiences. Because this was considered detached from a broader world of consciousness itself, its values indicated the activities of object-constituting whose reality was grounded as a formal and positive concept.¹¹³ This gave renewed potential for the rarefaction that moved towards what Kant held of a transcendental *a priori*. Husserl’s phenomenology was absorbed in France from the 1930’s but, from Foucault’s perspective, it avoided the consequences of the difficult anthropological question over man.¹¹⁴

Anthropology and the Concept of the Positive

Writing in the context of the 1960’s, Foucault saw Phenomenology’s latent intent to redefine discourse on the rational animal through implicating an intrinsic reason.¹¹⁵ Archaeology opposed such intrinsic reason as a ‘thought of the same,’ seen to lack the philosophical ambitions of Kant questioning the limits of universalising science and *The Order of Things* proposes that a modern Cogito is grounded in a network “that does not think.”¹¹⁶ Foucault distinguishes a modern Cogito in its fundamental confrontation with the dissimilar, discontinuity and difference, initiating a shift to analytic possibilities attributed to reflecting on an ‘unthought,’ -

¹¹¹ Noted in Eribon (1991) p157

¹¹² And they “may now succumb to the same fate.” Husserl (1962) §32

¹¹³ Ibid §46

¹¹⁴ Considering formal function under intentionality, is taken to define an ideal structure, rather than actual ones. Heidegger (1985) p106

¹¹⁵ Foucault (1970) p341, Heidegger also notes the similarity of phenomenology to the Christian tradition “Let us make man in our own image and likeness” Genesis 1:26, Heidegger (1985) p126-127,

¹¹⁶ Foucault (1970) p324

“...established far removed from both Cartesianism and Kantian analysis, a form that involves for the first time, man’s being in that dimension when thought addresses *unthought* and articulates itself upon it.”¹¹⁷

The discursive model that *The Order of Things* tracks, moves historically from the ‘natural’ origins that sustained 18th century thought through its strategies of history and culture, through the start of the 19th century and the divergence of new human sciences. In an era of Positivism’s expansion, the dissolution of discursive possibilities for an Enlightenment Science of Man were compensated for through legitimised forms of pseudo-scientific concepts attributed to man’s natural being. Despite redefining the concept of the natural, Foucault saw 20th Phenomenology as still being implicated in this.¹¹⁸

The ambition behind the Enlightenment sciences remained something that the wider reaches of Positivism had hoped to discover. For an Enlightenment Science of Man, the ambition for a natural function of the subject that could displace a historical-metaphysical concept, had lent itself to a particular facet of the Kantian ambition for the transcendental concept during the 19th century. *The Order of Things* attributes to this the limited forms of a meta-psychology that informed human sciences formalised through a particular combination of mathesis, science and philosophical reflection.¹¹⁹ From this perspective Foucault echoes Martin Heidegger’s estimation that Kant ‘shrank back’ from acknowledging the power of representation as an ‘independent’ power,¹²⁰ and *The Order of Things* follows Heidegger’s line of thought around the compromise of extending a Cartesian approach into man’s world. A dispute within an earlier Science of Man was about constituting a legitimate horizon that could account for both a sensibility and the rational thought in man: Heidegger identified an independent power in *Critique of Pure Reason* with a metaphysical analytic whose ‘pure synthesis’ was accounted for by power of imagination. This unity of time was understood to open the space of possibility for the transcendental knowledge, it derived its root concept from this and served to account for latency in all actions and reaction attributed to human reason, as well as the finitude in the transcendental horizon. Heidegger’s objection was that Kant left this power of imagination suppressed within the second

¹¹⁷ Ibid p325

¹¹⁸ Ibid p327

¹¹⁹ Ibid p347-348

¹²⁰ Ibid p334. See also Heidegger (1997) p116

edition of *Critique of Pure Reason*, displaced in favour of the power of an understanding. For Heidegger, the theoretical possibilities of a 'pure sensibility' in the subject was downplayed by Kant for an emphasis on limits of human understanding.¹²¹

The function of this power was in reproducing time in the imagination where it gave the space of play for inner sense. Heidegger contended that Kant 'wanted to say' that the concept of time was produced under limits of this broader transcendental horizon of sensibility, a self-affection that accounted for limits of what could be attributed to the power of representation. But by prioritizing a transcendental time over his metaphysics, Kant "just develops into the positive problem of showing that, like time, space, in a certain sense also belongs to the self as something finite..."¹²² Kant's transcendental horizon becomes, therefore, "essentially spatial," serving merely to emphasize its status as the product of 'something else.' The question of what this excludes as the source attributed to a root concept of any positive transcendence, is the 'unspoken' function behind the polemic of transcendental finitude. This source stands as the power behind an idea which "shines forth, must drive and guide..."¹²³ It becomes the basis for the problem taken up in *Being and Time* which saw Heidegger looking beyond conditionality, to the positive sense given in terms of a fundamental ontology.

Kant's *Anthropology* also had a significance for Heidegger in demonstrating how the empirical domain had an evident lack of pure reason. *Anthropology* opens an important dissymmetry for any transcendental logic that follows the wider ambitions of the Critique. The account of transcendental power as delimited according to a transcendental logic meant that Kant was opening the reverse question - what concept could account for the 'nature' of this power? In this sense, Kant's Critique could be seen as the original approach within the ambitions for a Science of Man to considering two domains, of pure and empirical reasons; *Anthropology's* significance was that these domains converge encompassing the space of competing forms of reason. What Heidegger characterised of an Enlightenment Science of Man was its framing of the question of constituting a rational psychology around this empirical field of man. These were the twin

¹²¹ Heidegger (1997) p137

¹²² Ibid p140

¹²³ Ibid p141

intentions of both grounding philosophical practices within an empirical domain, and upholding the question of a fundamental nature of man's activities within the world.¹²⁴ As broader philosophical problems, these extend behind the ambition for a special concept that could unite both explicit and latent reasons around disciplines of psychological, biological, sociological etc. But since the object of anthropology remains completely mired in indeterminacy, Kant's *Anthropology* only highlights how an Enlightenment Science of Man becomes limited in its ambition by approaching an empirical Science of Man in terms of a rational psychology.¹²⁵

The ambition to apprehend a contemporary situation of man's activity in the world extends the limits of any positive interpretation as the fundamental problem around man's reason to a socio-political discourse. Transcendentally critical questions avoided this original problem derived of an Enlightenment Science of Man. Heidegger formulates his philosophical question around what positive concept such transcendental knowledge would depend on? He conceives of positive knowledge as a 'positum' that "springs forth from the pre-conceptual understanding of Being."¹²⁶ This is a Being that positively presents itself as self-evident, but whose question is of the relation between what is self-evident and that which gives its concept - what can be held to exist behind the drive directing constancy of human understanding? This is what exists despite Kant's finitude. Original positivity is defined by Heidegger as this constancy, prior to any positive horizons and beyond strict distinctions of inner and outer determinations.¹²⁷ Historically, it is the positivity of the sign that accounts for a power projecting an idea onto what is self-evident in time. This gave the temporal horizon that defined the terms of Aristotle's legacy for the history of metaphysics; here constancy meant the idea that could sustain the natural concept. Heidegger thereby characterises Kant's critical legacy as the return of an original finitude for the modern world, but through bringing man's psychic structures into view as man's actual relations to his general existence.

¹²⁴ This becomes the problem of a philosophical anthropology. Ibid p146

¹²⁵ Wolff, Baumgarten, et al

¹²⁶ Heidegger (1997) p158-159

¹²⁷ This is the determination which Heidegger takes as a struggle for a concept that returns to a 'gigantomachy' over any positive determinations in knowledge. In Greek mythology this term refers to the war between the giants and Zeus, in this case the giants are Plato and Aristotle. Ibid p168, note 232, p171

The main significance of Kantian finitude is in reversing Aristotle's constitution of the positive sign of nature. A power of self-affection projects, as a positive concept, that which *Critique* constituted negatively as the constancy of a norm. But Heidegger also places this legacy within the dispute over an Enlightenment Science of Man and when Kant 'shrinks back' from the power of imagination in the later *Critique of Pure Reason* he restricted this to a dispute over the power of representation. Foucault closely follows this legacy in *The Order of Things* from the perspective of the status of a Science of Man during the 19th century.

The Anthropological-Critical Reflection

Foucault draws his own significance from *Anthropology's* account which follows from his reading of the *Opus Postumum*. This text is understood as aiming to explain how a transcendental knowledge could link a positive knowledge to the universal experience of the world. Such a relation to appearances of the world is derived from the logical judgment of relation, and follows an exhaustive deduction of the scholastic tri-partite scheme of subject, predicate, copula. But it also left the necessity of the conceptual link between the subject and its predicate at the level of an aesthetic activity.¹²⁸

Both the thinking subject and its "changing powers of sensation" are here described under the 'concepti subjecti,' which is a domain of subjective activity becoming positively grounded, despite any particular logic concerning itself only with the distinction of identity and difference.¹²⁹ Beyond the strict logic of identity and difference, positive values are affirmed by the repetitive actions as experienced in the world. Importantly, the positive experience of the world necessitates an a priori opening of the critical reflection on the source of its activity in order to give it transcendental meaning. This is the questioning reflection that *Opus Postumum* followed through an originary principle attributed to the *Gemüt*, which was excluded from any transcendental thought.

¹²⁸ Foucault (2008) p78, Kant (1992) p221

¹²⁹ Foucault (2008) p79n, p80-81

However, Foucault did not read this as as a transcendental resolution to the problem left by the Critique. Rather it served a theoretical concept in its virtual form; the possible understanding of a transcendental domain of man and his world. Kant always maintained as problematic the actual limit in man's relation to his world, but this text reversed the possibilities of the *Gemüt* in its metaphysical function. This distinguishes his approach from Heidegger. The function follows from a necessity that Foucault attributed to Kant not taking a naturalist perspective. This saw the *Gemüt* provide a transcendental stance as the means to instigate what a Science of Man could not limit to an empirical knowledge of the world.¹³⁰ Such a stance follows from Kant's concern for a disciplinary perspective whose higher ambitions were in developing the self-awareness necessitated by subject becoming an object of an empirical world.

Foucault also understood Kant as wanting to differentiate what was subjectively conditioned over time through a distinction between soul and *Gemüt*. The subject's positive knowledge relates to an inner sense as modes of empirical knowledge and the *Gemüt* could account for the animation behind the "work of ideas." It "offers life the realm of the possible orientating towards a virtual whole" as an account of objective possibilities in the power of reflection. This was what Foucault noted in his *Introduction* as mapping a distinction between the transcendental and empirical perspectives.¹³¹

- In transcendental thinking, the *Gemüt* serves the metaphysical function which was negative since the principle is necessarily absent from any positive structures of knowledge – these are accounted for by the spontaneity of the imagination. However, in an empirical observation, the principle accounts for evident functional differences within knowledge and thereby given to a conceptually positive structure.

- Although any positive function in knowledge can be 'self-evident' in the empirical field, when exposed to a regressive analysis this reveals a descent - moving from an ideological form of naturalism to the philosophical possibilities around the originary principle. Because the empirical field does not follow the common Kantian distinction of receptivity and spontaneity in an understanding, the positive function appears as continuous to the relation of the power of

¹³⁰ Ibid p78

¹³¹ Foucault (2008) p57-58,p63

knowledge in its admixture of irreducible possibilities. Conversely, an empirical analysis necessitates an existence of such “seeds of powers,” a priori to any constitution of a positive concept.¹³²

What does Foucault understand of such ‘seeds of power’? Heidegger’s ontology puts the conditioning of inner sense a priori in accordance with the metaphysics of finitude. This also works through the questions followed by Kant’s *Logic* to arrive at the fundamental question of man. But by following the dialectic of *Critique of Pure Reason*, the idea of nature did not succeed in constituting nature as a theatre of living organisms; the a priori system of Newtonian physical laws meant abandoning an intrinsic relation between logic and life. It is *Critique of Judgement* that revisits this through the regulative idea, an abstract concept introduced as the transcendental horizon that takes the form of a conceptual viewpoint that delimits an idea of nature.¹³³ But Foucault distinguished the relation of anthropology to the Critical logic as ‘interrogating’ the critical stance. Rather than relating to the *Critique of Pure Reason*, by following Kant’s explorations in the *Opus Postumum* which concerned itself with fundamental problems of philosophical reflection, the ‘seeds of power’ point to the activity by which synthetic thought unifies its world-view according to its powers of transcendence.¹³⁴ The importance that Foucault attached to this was through reading Kant as having ‘re-inserted’ the exploration of inner sense in the domain of *Anthropology*. This gave a reflection structured around a traditional logic as it extended behind both a rational psychology and a rational physiology.

Here is a reflection that gives the perspective on an ‘unthought.’ While the *Gemüt* has ‘no language,’ *The Order of Things* attributes meaning to a critical rendering apart of man’s world from its historically positive concept – namely, the concept of man. Man’s world is this empirical projection inherently lacking a transcendental concept, which is emphasised by Foucault’s reading of *Anthropology*. The empirical perspective follows the ‘changing powers of sensation’ in a world that is extended by a reflection on individualised logic. Foucault could

¹³² Ibid p72

¹³³ ‘Appendix to the Transcendental Dialectic’ CPR A642/B670ff

¹³⁴ Foucault (2008) p75

further point out that *Anthropology* makes no textual relation to the Critiques, rather it was now following a function of empiricity which puts time at the root.¹³⁵ Therefore an anthropological-critical reflection gives positive meaning to such a concept of world as a perspective on inner sense. The emphasis on the functional aspect derived of the *Gemüt* at the fundamental level of man embodies this radical root, but at the transcendental level it grounds his concept of world - which is necessarily positive. But positive meaning will ultimately be indeterminate because sensibility is distributed internally at the different levels that embody a complex of necessity and freedom. From this, Foucault concludes that the empirical domain of Kant's *Anthropology* depicts a systematic projection of a general empirical principle across time, to which any positive concept will necessarily retain an admixture of reason and praxis. Furthermore this concept will only become evident through a functional relation of man to world, although the theoretical cohesion follows from what the *Opus Postumum* explored as a self-determination that gives positive content to an experience in general. But the particular significance in relation to an Enlightenment Science of Man, with its ambition of discovering a legitimate birthplace for a universal signification, leaves the positive concept as internalising empirical differences in favour of an account of human dispositions in the world. This no longer follows Kant's sharp distinction between positive reason and existence in general and Foucault could extend this to his concept of power.

In Kant's era, a metaphysical dimension informed Enlightenment thought, to which he took up the non-naturalistic position. Foucault's Archaeology followed a similar approach against the philosophy of the subject, but after 1970 his positive ambitions followed a transition against an abstract "denial of the body."¹³⁶ This meant constituting the basic epistemological function whose perspective on historical discourses could follow a continuity with the natural function mediating the foundations for life through a genealogy. When he developed the criteria of a concept through the study of non-discursive practices, it was to introduce the perspective for a historical narrative. Foucault brought into play the 'felicitous positivism' that maintained a philosophical perspective on the empirical world of man; from the anthropological-critical

¹³⁵ Ibid p88-89

¹³⁶ 'Nietzsche, Genealogy, History' Foucault (1998) p382ff, Dreyfus and Rabinow take this essay as the turning point towards a concept of power.

reflection on the ‘matter of logic,’ he moved to an engagement with an empirically positive discourse behind evident forms of human experience. This was already identified with what Kant’s *Opus Postumum* extended through degrees of “changing powers of sensation,”¹³⁷ and informed *Anthropology* with the practical means for man to define his concrete world. Foucault’s shift beyond strict historical conditionality, was through the discourse by which positive content was given for a self-determination. From the reading of *Opus Postumum*, this was described by the world-concept as a positive domain of existence, but which remains a virtual hybrid of freedom and necessity and retains actual possibilities to be explored around a tri-partite scheme of source, domain and limit.

Biopolitics as a Science of Man

Foucault’s historical discourses constitute a genealogy that gives his perspective on the core dispute around an Enlightenment Science of Man.¹³⁸ What is significant in his analysis of bio-power orientates itself at the level of the sociological and anthropological, through a practice of knowledge whose effect is “modifying something in the biological destiny of the series”.¹³⁹ This is particularly evident in the texts of Foucault’s lecture series, *Security Territory Population* and *The Birth of Biopolitics*, which follows the theory of state as capitalising on an emerging concept of its milieu from the 17th century onwards. Milieu is conceived as a domain of action and reaction where a multiplicity of individuals are biologically bound to a material world within which they live. The biological species carries the capacity for a ‘second nature,’ to which the social means an artifice that functions as a concept to be intervened into by a power; the concept of power delimits what constitutes this knowledge only to pragmatic structures.¹⁴⁰

Following a history of the 18th century discovery of *homo economicus*, a biopower unfolds from “the political action that it proposes,” a narrative of new techniques of power.¹⁴¹ *Homo*

¹³⁷ Foucault (2008) p79note

¹³⁸ The shift following Foucault’s essays ‘The Order of Discourse’ ‘Nietzsche, Genealogy, History’

¹³⁹ Foucault (2007) p10

¹⁴⁰ Ibid p21ff, p27n. According to Canguilhem, Lamarck describes the set of actions exerted from the outside as ‘circumstances’ while the milieu connotes the idea of a medium, Canguilhem (1965) p131

¹⁴¹ Foucault (2007) p36

economicus integrates the self-disciplines of modes of conduct of a production, parallel to that which Enlightenment political thought looked to understand as a physics. In this era, physics had a relation to a Science of Man in the sense of being a domain of nature potentially open to a unified knowledge. But this aspiration, which Foucault now distinguishes from an ideology, was based on a political sense of what nature signified in relation to a population.¹⁴² For a contemporary idea of population, the new question also parallels a Science of Man but breaks with negative political models of sovereignty. Population in itself serves the new positive concepts as they extend theoretically to the mechanisms of power through an art of government.¹⁴³ Biological discourses on populations contend with a “mass of juridical, political and technical problems” at the confluence of a series of existing domains of knowledge. Population supersedes models of sovereignty, the substitute for man who did not exist. It informs government with its positive content in the form of statistics, which Foucault identifies as the matter for a new science of state. From this perspective, the analysis of economic power means that population is always excessive: population is a heterogeneous knowledge open to be “governmentalized”¹⁴⁴

Foucault’s phenomena of “governmentality” serves a knowledge as disciplinary model. A disciplining of population derived its ideal function from a model of the Greek magistrate applied as a typology of man. While Philosophy offered critical models, the positive model is attributed to the archaic Christian pastorate whose positive function was to apply an “economy of souls” bearing comparison with the doctor. The significance of this practice is affirming difference for psychic structures, a reflection on the Other, which produces the new power, namely, the subject of community. The product is an understanding which is the prelude to governmentality.¹⁴⁵ However, from the perspective of a Science of Man, the true significance appears through what Descartes philosophy proposes as representing a power to be rationalised according to a domain of scientific practices and principles. Foucault takes this as a subject continuous with the world of scientific principles which lent the central political problem of the Classical age. In the ambition for an open practice of government, the public domain of man

¹⁴² Ibid p49, not an ideology is the distinction from *Discipline and Punish* p221

¹⁴³ Ibid p73-74 ie supersedes Hobbes and Rousseau

¹⁴⁴ Ibid p101, p109

¹⁴⁵ Ibid p117, p174, p180

lacks a model, hence the question for the Classical epoch of its *principia naturae*. Italian humanism could provide a provisional answer as the basis for a *raison d'état* which was the concept of man.¹⁴⁶ One can see the parallel with intuition and understanding, the two stems which informed Kant's domain for a Science of Man.

Foucault later lectures insert an anthropological multiplicity into this domain, rather than questioning the unity of its objects. *Raison d'état* has to contend with a blur of positive and negative attributes, "it has become a domain, a set of objects, a type of organisation of power."¹⁴⁷ Organisation is something to be constituted from the reflective practice of a 'second nature,' but the dispute over the anthropological domain will leave the state with only one perspective. Hence, as a Science of Man, it is a reflection open to a new form of politics, "politics is not something that falls within the form of legality or a system of law. Politics is something else...it is concerned with necessity."¹⁴⁸ One understands why the question of political freedom is what Foucault contends is the pure form of reason extending intrinsically to violence. Populations are central to this knowledge composite and any technical power that serves a practice of government needs to resist revolutions and temporal cycles with the distribution of intrinsic resources, individual interests, and competition within populations, whose specific problems are dynamic. This is why an Enlightenment political science, like the sciences of nature, is proposed around a pure "notion of force."¹⁴⁹

This second dimension lends itself to the theory of balance in the multiplicity of forces in the interiority of the population. Foucault proposes that historically Germany has served as the "microstate laboratory...and a site of experiment" for developing the theory of population through *Polizeiwissenschaft*.¹⁵⁰ This was an anthropological systematic that appeared from the beginning of the 17th century as a regulatory concept of state, but the excessive nature of an anthropological domain transcends its mechanisms of power and effectively dismantles a police state and any concept of right that it can propose. By the 18th century, the concept of nature

¹⁴⁶ Ibid p238

¹⁴⁷ Ibid p247

¹⁴⁸ Ibid p263

¹⁴⁹ Historically Foucault attributed this to Leibniz. Ibid p296

¹⁵⁰ Ibid p317

serves to displace a traditional cosmo-theology, giving political science its definitive break with the past. While a new cosmopolitics remained to be theorised, its criteria were understood to require a, -

“naturalness specific to man’s life in common that economists ultimately bring to light as a domain, a field of objects, a possible domain of analysis, knowledge and intervention. Society as the field of naturalness specific to the naturalness of the many will be called civil society, emerges vis-à-vis” (p349)

When the concept of man emerges at the level of a scientific phenomena during the Enlightenment, the significance appears as a problem of government in relations to its population. Here, Foucault’s biopolitics turns to a concept of power for a genealogy of the modern state.

Biopolitics, Vitalism, Positivism

The contemporary problem on which his biopolitics focuses attributes the power of constitution over society to the market, and is the specific form of liberalism theorised in Germany around the mid 1930’s. But according to Foucault’s ‘genealogy of economic style,’ this in turn follows from a 19th century idea and marks an important schism with an earlier understanding of liberalism. The neoliberal form no longer takes ‘nature’ to indicate a circulation and exchange values, but a notion of competition. This is specifically identified with social and economic discourses from around the 1890’s, an analysis of processes which took a principle of competition in its ‘pure form.’¹⁵¹ The market was no longer predicated on equivalence but on inequality and difference. This historical development no longer took its measure according to a naive naturalism of the 18th century, but was formalised and extended as a new style from certain constituted rules of practice identified within the market. “Competition is an *eidos*” says Foucault.¹⁵² It developed an internal logic that it formalised. The market was a power taken as productive of society and its state, under certain conditions. These are conditions, “carefully and artificially constructed” to be a milieu of ‘pure competition.’ The market now serves as

¹⁵¹ Foucault (2008b) p168, following analyses of Leon Walras, Alfred Marshall, Johan Knut Wicksell and sociology of Max Weber.

¹⁵² Ibid p120, it is now under the influence of Husserl he notes.

confluence of diverse domains of knowledge under this composite concept of milieu – the reverse of how 18th governments orientated policy towards a hybrid concept of natural milieu.

Foucault calls this rarefied concept of market competition a ‘positive liberalism.’ This intends government to be master of economic development, through a concept no longer concerned with separate domains of knowledge. These become subordinated under an integrated multiplicity of knowledge constructed as a “governmental style,” whose composite domain serves for an intervention into social structure, and acts to eliminate archaic phenomena, historically “foreign to the economic process.”¹⁵³ From a theory of competition comes the dynamic whose threshold requires a vigilant intervention necessitated of a neo-liberal art of government: it appears against a pathology of historical anomalies that run contrary to an idea of pure competition. Its schema, or mechanism of competition, is constructed around a new concept of labour.

This was the concept of labour that Foucault saw developed during the 19th century. As a concept, it was not a return to 18th century *laissez faire* economics, but a 19th century idea that followed from what a contemporary *vitalpolitik* took as formative power for society from an idea of enterprise. *Vitalpolitik* historically emerged from a debate on economic theory after the 1890’s: Foucault identified this with the crossroads of the criticism of the homogenised and standardised societies that extended behind the 19th century concept of labour informing both a politics of left and right.¹⁵⁴ The critique shifted to an energetic of labour for its analysis of population, as the enterprise unit now lent itself to a theory of human capital. Foucault’s contention is that after the 1890’s this served a genealogy for a ‘way of thinking,’ a “general style of thought, analysis and imagination” which historically gave the new economic-juridical couplet to be constituted through the concept of labour.¹⁵⁵ The competitive enterprise unit lent a historical specificity to an emerging political style as point of view.

In *The Birth of Biopolitics*, Foucault relates the theory of human capital to an older concept of labour precisely because classical economics was unable to analyse labour in its qualitative

¹⁵³ Ibid p134, this is cited of Röpke in *Gesellschaftskrisis*

¹⁵⁴ Ibid p147-148, following Weber, Sombart, Schumpeter.

¹⁵⁵ Ibid p218-219

aspects. “It was a blank page, a gap or vacuum in its theory that a whole philosophy, anthropology and politics, of which Marx was precisely representative, rushed in.”¹⁵⁶ Foucault returns to this ambition for a special epistemology over the domain of competing ends, the ambition for a political science of human behaviour over man’s activity, or internal rationality, that accounts for the strategies of individuals from the perspective of an economic effect. It aims to encompass all the “physiological and psychological” factors which contribute to being an enterprising, human capital, a “machine for generating an income stream”¹⁵⁷ Labour and the concept of human capital, give the intrinsic elements to be theorised positively. For example, when genetics lent itself to an analysis around the elements of risk, it served to convey its positive knowledge over the future of human capital. Human capital also serves to bind itself culturally to an extended domain through its investments around its conditions of life. It embodies a principle of order that previously fell to domains of physiology, psychology, anthropology, etc.

For Foucault, the concept of labour also justifies a permanent political criticism of any aspirations to “economic positivism.” From the perspective of an ‘economic tribunal,’ the idea of human capital will embarrass juridical administrations by offering the negative perspective on any juridical concept of right.¹⁵⁸ This is the paradox of micropolitics as ideological inflation of knowledge within the activity of the subject. Through questions of conduct and acceptance of the reality of the milieu, it opens up a concept to behavioural techniques of governmentality, but Foucault’s emphasis on human capital is as irreducible, unconditional element as it appeared in the 18th century, not susceptible to regressive analysis. The return, through his concept of power, is to the permanent conditioning of the positive system that must accept a certain negativity for the constitution of its world. Human capital exists within a domain that cannot be totalised, only opened to the calculation which accords to the idea inserted into its reality, which is the positivity of man’s world.

¹⁵⁶ Ibid p221

¹⁵⁷ Ibid p224

¹⁵⁸ Ibid p247

What is this idea? In the 18th century, it was nature which remained the “theological conception of natural order,” but whose possibility was of the point of view over all the dispersed interests that remained coupled to the empirical. “Political power is not to interfere with this dynamic naturally ascribed to the heart of man.”¹⁵⁹ The idea of nature served to resist the sovereign state as paralogism of political totality; this was also an idea attributed to man, -

“Homo economicus is the one island of rationality possible within an economic process whose uncontrollable nature does not challenge, but instead founds the rationality of atomistic behaviour of man.” (p282)

This idea guaranteed the world of man was constituted from multiple points of view, to which an economic discipline remained an aesthetic, lacking totality. The juridical problem for the 18th century was formed around such intrinsic difference, a heterogenous power that precisely eluded a founding of positive law and natural right. *The Order of Things* identified this with the dispersion of an Enlightenment Science of Man.

The problem of political economy in the 20th century was the converse problem - the impossibility of constituting a positive Science of Man meant that Enlightenment liberal theory remains an example of a science that could no longer lay claim to government rationality. As political theory it must co-exist within a domain represented by civil society, an assemblage or multiplicity of practices that exists only as a transactional reality, and subject to the dynamics of governmental reasoning.¹⁶⁰ It is here the pre-critical status of the ‘zoological singularity’ of *The Order of Things* followed Foucault’s positive ambitions through the concept of power as the practice whose open dispute was the status of man.¹⁶¹

Gilles Deleuze and the ‘Rarefied Positivism’

Deleuze’s famous works with Guattari also follow the “fundamental problem of a political philosophy” in the productivity of social structures but this is explicitly distinguished as a theory

¹⁵⁹ Ibid p278-280

¹⁶⁰ Ibid p297

¹⁶¹ Ibid p57-58,p63, see also Foucault (1970) p241

“not of power but of desire.”¹⁶² This distinction marks Deleuze’s own idea of critical freedom, often related to his work on Spinoza inspired by Nietzsche.¹⁶³ But in his book on *Foucault*, he points to divergent interpretations of early 19th century practices around the emergence of Positivism that highlights the ‘age of Bichat.’ This follows his claim that Foucault developed symbolic values while Deleuze was indicating a form of vitalism understood in a functionally different way.

Foucault’s ‘felicitous positivism’ captures, in his own words, the investment that followed a “double movement of liberation and enslavement.”¹⁶⁴ Transcending historical concepts with the functionally positive concept was legitimated by an abstract principle that followed from Kant’s *Gemüt*. It took Positivism’s power in the form of a will to truth but followed the Kantian sense of subject becoming an object. The ‘felicitous Positivism’ serves effective mode of subjectivation understood here through the context mapped out from Kant’s *Anthropology* and its concern with knowledge was vital “in so far as it is philosophically relevant to the self.”¹⁶⁵ It meant the necessary ethical ‘equipment’ for a life-struggle in the empirical domain. History serves this value as ambition, disposition or drive behind any positive knowledge, but its critical test, or practice, remains explicitly related to what Descartes defined paradigmatically, i.e. an domain open to a universality of knowing, in as far as it serves the vital function freed from any socio-hegemonic context.

For Foucault, a naive Positivism was implicated in shortcomings of its own universalising ambition, and necessitated the anthropological-critical function to return empirical actuality. However Gilles Deleuze attributed this to Foucault’s anti-naturalistic stance and the distinction appears in what Deleuze claimed as intrinsic values of the sign.¹⁶⁶ In his commentary on *Foucault* he explains how intrinsic values specifically serve to re-orientate empirically positive practices,-

¹⁶² Deleuze & Guattari (1983b) p29. In contrast to Power, ‘desire’ intends to define the “cutting edges of creation.” Deleuze & Guattari (1988)p531n.

¹⁶³ See Patton (2000)

¹⁶⁴ Foucault in Adams (1986) p162

¹⁶⁵The tradition also appears to have associations considered in terms of a *via negative*, taken up in political terms against repressive forms emerging under Christian technologies of the self. see Bradley (2004)

¹⁶⁶ Foucault “sounds like Bachelard,” according to Deleuze (1988) p57, p20

“There are only practices, or positivities, which are constitutive of knowledge: the discursive practices of statements or the non-discursive practices of visibilities.”¹⁶⁷

This conflation of positive practices marks Deleuze’s fundamental distinction with an epistemological project which pivots around a Cartesian problem of universalising intelligibility. Deleuze thought this already displaced intrinsic elements of empirical sensibility and this captures the tension embodied in his comment that the early Foucault followed a “rarefied form of positivism.”¹⁶⁸

By contrast, in his own text on Nietzsche, Deleuze’ saw the ‘delicate problem’ of producing a positive concept as foregrounding the theme of positivity and objectivity around the significance of a combinatory. This indicates a differential that accounts *a priori* for constitutive tendencies within an empirical sensibility.¹⁶⁹ When Deleuze downplayed Foucault’s “neo-Kantianism” it was for the specific aesthetic activity of constituting meaning from the sign.¹⁷⁰ Power meant an active faculty of synthesis of meaning, rather than an explanatory concept. In his discussions of the function of the sign, Deleuze distinguished representational norms from objective appearances, specifically against the legacy of ‘neo-Kantianism,’ since Deleuze saw true critique as the form of practical philosophy that distinguished itself from an account of formative power.

The underlying theme of the *Foucault* text is how a wider analytic process conceptually substitutes ideas, rather than being conditioned under a history. Deleuze presents this inverted use of history as justified by the limitations held of the Critical Kant,-

“Kant had to invoke a third agency beyond the two forms that was essentially mysterious and capable of taking account of their co-adaptation as truth.”¹⁷¹

Kant’s third agency was necessitated by both attributing power to imagination and conversely excluding it *a priori* from schematics. This left Kant displacing a “hidden art at the depths of the human soul,”¹⁷² for the function reflected through the *Gemüt* as a power of judgement. The question of sensible apprehension follows from a priori transcendental principles grounding an

¹⁶⁷ Ibid p51

¹⁶⁸ Ibid p13

¹⁶⁹ Deleuze (1983) p53, on a symptomatology see p75

¹⁷⁰ Deleuze (1988) p60

¹⁷¹ Ibid p68

¹⁷² CPR A141/B181

understanding, which was what *Critique of Judgement* took to inform an aesthesis accorded to the normative idea.¹⁷³ In this account, an image is drawn against the multiplicity of an empirical imagination had a necessity explained by a doctrine of mean representation a priori. When *Critique of Judgement* explored this, it was through an ideational organisation taken up through basic principles given to teleology.¹⁷⁴ Because this was centred on a norm constituted under an ideal schematics, Deleuze did not see this as ‘true critique.’ Instead, the issue was the combinatory power which delimits certain positive functions attributed to reason; this becomes the central question informing his own aesthetics. When he gave this the context for a reading of *The Order of Things* in the *Foucault* text, Deleuze’s aesthetics are inserted within a context of Foucault’s socio-political domain.

Deleuze and the Question of Power/Knowledge

In the *Foucault* text, Deleuze takes a combinatory as delimiting certain positive functions in the relation between knowledge and power. The question of power now denotes a relation between forces, but considered as active categories of power with a primacy over the passivity of knowledge. Knowledge means formalised functions, objects of seeing and speaking, stratified and archived. By contrast, power is an active function which orders and composes, leaving the mark of force. Deleuze designates the diagram as the particular feature in the distribution of strategic power which he relates to the practice of a micropolitics.¹⁷⁵

Knowledge is no longer an explanatory but merely an attribute of a power’s orientation and what constitutes this domain remains under a wider effect of the combinatory. It is the activity of the combinatory by which Deleuze avoids a transcendental perspective since power no longer depends on an ideal capacity to function. This is illustrated explicitly in the pivotal fourth chapter of the *Foucault* text (‘Strategies or the non-Stratified: The Thought of the Outside (Power)’) which impacts on Foucault’s ‘analytic of finitude.’ Deleuze inverts the historical relation with force as it appears during the 19th century, -

¹⁷³ Kant *CJ* §17

¹⁷⁴ *Ibid* §66

¹⁷⁵ *Ibid* p74

“In order for man to appear as a specific compound, the forces that create him enter into a relation with new forces that evade that of representation, even to the point of deposing it.”¹⁷⁶

In Foucault’s terms, life, language and labour, are finite forces that impose history on man. However a substitutive combinatory is an activity that evades subordination to representation and gives a loss of perspective that appears as the legacy of the 19th century science. Deleuze’s substitutive history gains the particular significance that,-

“man replaced life and the subject of law, the moment his image was composed of vital forces during the political era of constitutions...but today law has again changed subject because even within subjects, the vital forces are entering into new combinations and composing new figures...in this way producing effects not of universality but of transversality.”¹⁷⁷

Correlated to the Science of Man which lost its universal perspective, ‘transversality’ gains a new object of a science through the knowledge of ‘vital forces’ in combination with ‘what the will wants.’ The shift is parallel to the advent of Positivism and the move from a critique of law to the description of the status of the vital.

The parallel shift also appears in Deleuze’s book on Nietzsche. Here determinable reason relates to the differential typology where the differential has the status of the third element.¹⁷⁸ According to Deleuze, Nietzsche looked beyond Kantian paralogsms and, reading *The Order of Things*, puts this active/passive opposition within Foucault’s socio-political space. It serves to relate what *Nietzsche & Philosophy* had already emphasised around the differential element and what Deleuze took as the qualitative determinations, understood to be behind Nietzsche’s intention in *On The Genealogy of Morals*. This distinguishes the question of an orientating principle around the will to power rather than a subjective capacity for freedom. In the *Nietzsche* text, this appears in the surplus force of a binary opposition between the sign of the ‘material body’ and the idea of the ‘will to power.’¹⁷⁹

¹⁷⁶ Ibid p88, see also the note on p144 which attributes this to *The Order of Things* pp369-70

¹⁷⁷ Deleuze (1988c) p90-91

¹⁷⁸ Deleuze (1983) p84ff

¹⁷⁹ Ibid p85-86. Deleuze specifically points to Nietzsche’s reworking of CPR on p89

Foucault's concept of power followed a historically constituted socio-political domain but Deleuze's differential element transforms such a domain into an 'open field' by avoiding specifying human relations. In the open field, power is associated with an idea of positive categories in general, -

“we can therefore conceive of a necessarily open list of variables expressing a relation between forces or power relations....these are the categories of Power.”¹⁸⁰

Positive categories presuppose a general theory of relations and Deleuze's 'diagram of power' gives an idea of positive categories that drew on an interpretation from *Nietzsche and Philosophy* which defines genealogy as specifically aiming to radicalize Kantian critique. When Deleuze constitutes this as a problem of the 'true' measure of value in *Nietzsche & Philosophy* the radicalisation of critique becomes the primary task of evaluation of knowledge as 'force.'¹⁸¹ This served Deleuze by distinguishing two types of criticism,-

- firstly a criticism implicated of the archaeological Foucault who 'stood behind' a critique of knowledge. This distinction follows what Deleuze had already earlier described as the problem with Kant's transcendental philosophy;

“transcendental philosophy discovers what remains external to the conditions. Transcendental principles are the principles of conditioning, but not of internal genesis.”¹⁸²

- a second critique related to Nietzsche's ambition to account for principles of a substitution in reason rather than of principles to account for reasons in themselves.¹⁸³

In the *Foucault* text, Deleuze's reading of *History of Sexuality* focuses on the crucial concept of bio-power for another distinction in his interpretation;-

“Is not the force that comes from the outside a certain idea of life, a certain vitalism, in which Foucault's thought culminates? Is not life this capacity to resist force,”¹⁸⁴

In the idea of 'life' of the 'era of political constitutions,' Deleuze introduces the question of an Enlightenment Science of Man by foregrounding a 'certain vitalism.' The *Foucault* text follows

¹⁸⁰ Deleuze (1988c) p70-71

¹⁸¹ Deleuze (1983) p1

¹⁸² Ibid p91

¹⁸³ Ibid p89-93

¹⁸⁴ Deleuze (1988c) p93

the central dispute behind *The Order of Things* but opens this as a vitalism within Foucault's histories through the question of the practice of the physiology in Xavier Bichat.¹⁸⁵

The reading of *The Order of Things* pivots on the event which a history of modern thought normally associates with Kantian critique. But Deleuze referred this to an event as “thought through and lived out in the multiple deaths in the manner of Bichat.”¹⁸⁶ This event appears as the potential to ‘apprehend’ forces of finitude ‘within the body’ and is parallel to the dispersion of the Enlightenment Science of Man around life, labour and language. Likewise, the epistemic shift that appears in *The Birth of the Clinic* around a new medical Positivism at the start of the 19th century. The particular significance derives from the role of pathological anatomy for new positivistic discourses as a death became coextensive with life. Foucault attributed this as the basic function of psychoanalysis indicating a concept of normativity derived from a physiological understanding of the body as it becomes limited to psychic structures and their expression.¹⁸⁷ But in *The Birth of the Clinic*, Positivism in itself remained a negativity.

However, Deleuze sees this event as having a wider significance beyond any ensuing new medical function; it has “much wider implications” for the re-centring of a history of the subject - it expressed the ‘new axis.’¹⁸⁸ This axis he claims “haunts” all Foucault’s thought as “a certain idea.”¹⁸⁹ When Deleuze pursued the significance of this practice identified with the ‘age of Bichat’ it gave the context for his *Foucault* text around the ‘micropolitics of the sign’.¹⁹⁰

Signs of Difference

Deleuze’s departure from Kantian critique is mapped out in *Difference and Repetition* with a question; “in what sense does Kantian reason, in so far as it is the faculty of ideas, pose and

¹⁸⁵ Ibid p93

¹⁸⁶ Ibid p95

¹⁸⁷ Ibid p95. Foucault appears to take his Nietzschean aspect as emphasised by the passage in *The Gay Science* which calls on “the normal concept of health be abandoned by medical men,” as the basis of an individuation of moral health. (Bk 3, sect 120)

¹⁸⁸ Ibid p152note

¹⁸⁹ Ibid p97

¹⁹⁰ A domain of “uncertain doubles and partial deaths where things continually emerge and fade...in which is to be found the meaning of a micropolitics” Ibid p121

constitute problems?”¹⁹¹ He intends to separate this from the constitution of infinite nature that Kant proposed to eliminate, as well as ideal conditions of a Kantian time and space. The primary concern for Deleuze was the sign and its evaluation as attributed to a positive production of concepts. Although Kant’s autonomous values were attributed to an empiricist base, Deleuze’s question is why Kant’s conditionality apodictically avoids the empiricism of such activity, while paradoxically taking an empiricist nature as explanatory for a necessary transcendental function. This “cuts the aesthetic in two parts,” and makes excessive the element that constitutes empiricism. This was what Deleuze understood Critique’s conditionality served to negate.¹⁹²

Foucault’s *The Order of Things* distinguishes between Critique and a pre-critical Ideological analytic, as a primary division in narrating the history of dissolution of the Science of Man. The Ideological method, rooted in the series and its repetition, was derived from a Sensationalist epistemology of an idea-sign; *Difference and Repetition* identified this specifically with respect to the critical problem. The idea-sign is seen as removed from hypothetical conditioning and thereby altogether removed from Kantian difficulties of predication in transcendental experience. Deleuze relates this to David Hume’s naturalism where a double articulation of the sign held up an “irreplaceable subtlety” when following a description of an ‘open variable.’¹⁹³ The Sensationalist method similarly predicated certain elements which could be ‘naturally’ extended as actualities and the idea-sign was understood to index a grounded synthesis prior to any subsequent synthetic activity. It is a ‘sensible synthesis’ meaning a general grounding both for physiological possibilities of organic composition, and repetitive functions of psychology and its domain of memory- a phenomenal field for integrating what was significant in intelligible composition.¹⁹⁴

The problem for Deleuze is to constitute a ‘naturalism’ from the attributes of the sign. In this respect, *Difference and Repetition* also invokes, with a single claim, to be “following Condillac.”¹⁹⁵ This indicates the context understood of grounding an artifice as a temporal

¹⁹¹ Deleuze (1994b) p169

¹⁹² “Kant held fast to the point of view of conditioning without attaining that of genesis” Ibid p169-170

¹⁹³ Ibid p71

¹⁹⁴ Deleuze phrase is “cellular heredity” Ibid p71-73

¹⁹⁵ Ibid p78

synthesis from elementary habits. Habits predicated on primary experience of the world, are the historical root of the Sensationalist idea-sign, whose method served to constitute a ‘second nature,’ or sign, that could extend the articulation of empirical nature. The sign, stood a priori as aid to memory, grounds an understanding and Deleuze saw its particular importance for constituting a ‘synthesis of time,’ in the sense understood of an empirical conditioning a priori of the thinking activity. Such synthesis accords with a virtual idea a priori to sensible compositions but whose limit unfolds a double articulation of a combinatory. It also correlates to Bergson’s problem of synthesis where the ‘power’ of virtuality should be understood as the technical mode that allowed Deleuze’ to distinguish a method from the Critical philosophy.¹⁹⁶

This distinction extends over what Kant opposed in autonomous will with the power of being in a state spontaneously. A pure power and its concept of freedom were held as the completely transcendental idea. However, the Kantian will could also become pathologically affected by sensuous or animal motives such as desire which was deemed the contrary or negative to the ideal concept of human will.¹⁹⁷ This is what Deleuze claims “cuts the aesthetic in two parts” and offers the differential analysis of the sign, attributed to a ‘will to power,’ whose technical method is related to a virtual idea. Deleuze could claim that, “we necessarily affirm something of the object of a representation which is not contained within it,”¹⁹⁸ and the virtual gives an alternative model to the division between sensuous and ideal wills. This also explains the historical context in which Deleuze invokes the ‘Bichat event’ as claim the overcoming of a historical vitalism while retaining the technical function of evaluation in the idea-sign.¹⁹⁹

The Vital and the Positive

Both Deleuze and Foucault followed Nietzsche’s belief in the body as “more than a fundamental belief in the soul,” but interpretations of Xavier Bichat’s physiology illustrates how

¹⁹⁶ The chapter ‘Intuition as method’ Deleuze (1988a)

¹⁹⁷ Not ‘brutum,’ but liberum ..” Kant *CPR* A533/B561, A534/B562

¹⁹⁸ Deleuze (1984) p4-5, see also (1983) p79. In *Kant’s Critical Philosophy*, “imagination is thus really part of moral common sense” p43, while in the intermediary text ‘The Idea of Genesis in Kant’s Aesthetics,’ a sensible nature has a more nuanced assessment attributed to four modes, some positive and given to a creative synthesis. Deleuze (2000) p66

¹⁹⁹ Deleuze (1988c) p152n.

Enlightenment vitalism serves a conceptual narrative on the Science of Man.²⁰⁰ Bichat represents the form of vitalism that conceived of the vital as evidence of ‘force.’ It was understood as coextensive with a possible knowledge of the body and attributed to the positive categories of life. But vitalism also stands for a historical series of physiological models that followed the ambition to naturalise the image of the living body and its limit by understanding the basic functions apprehended as a proportionate response between an active organism and its milieu. This image served the medical account of dispositions in life to change and express an orientation towards the limits of the positive categories of life and accounted for as constitutive norms of vital function. In this sense, it gave the positive criteria as guiding norms for physicians, moral philosopher, educator and statesman. Rational physiology anticipated certain values as coextensive in the possible relations for a general concept of life. But positive categories had a visible finitude through the study of pathology. The radicalism that Deleuze attributed to the idea-sign was of the methodology that could relate this to the ambitions for an Enlightenment Science of Man. In this era this stood as a standard for the micropolitics through extension to the physical and the moral.²⁰¹

During the early 19th century Xavier Bichat was of a generation not looking to the past but towards developing a new scientific language. Bichat represents the new clinical medicine being developed from a rational physiological theory. He described two inner lives in a binary relation that relates a will to its passions, the struggle between spirit and body rarely in evident equilibrium.²⁰² The new physiology integrated an organic base as the dissociated form of visible life to which an animal state was the organised complex higher order with evident regularity to be accounted for rationally. The latter informs a normative image corresponding historically to vital ideas of life. Bichat understood the pathological as a contrary power at the limit of the idea to which his rational physiological synthesis was oriented around delimiting the historical concept of life. *The Birth of the Clinic* describes the practice of pathological anatomy as preceding the epistemic shift from which emerges French medical Positivism at the start of the

²⁰⁰ Nietzsche (1967) sect 491. This section also central for Heidegger’s reading of nihilism (1987) vol. 4 p133.

²⁰¹ Deleuze (1988c) p121

²⁰² Bichat (1827) 1:6:4.

19th century.²⁰³ The significance for Deleuze was in the claim of Bichat as first modern interpretation of death. Bichat functions in the *Foucault* text as a substitution, whose method contrasts with abstract principles such as the *Gemüt* or transcendental concepts that divide a ‘natural’ logic from an idea of life.

Xavier Bichat’s vitalism was ambiguous. Kant’s abstract transcendentalism gave unconditionality as negative, serving real positivity in representation. By contrast, Bichat’s empirical horizon of vital function takes the sign as upholding an objective standard as an idea of life. By delimiting a universal concept of reason this avoids a metaphysics of subjectivity through substituting a historically derived idea of the body and its soul for a physiology of animal reasoning, methodically unfolded in the form of the organic machine. Rational physiology would explain what phenomena could be attributed to vital force and give the conditions for a debate to which Bichat’s physiology marks the limits of a project for the universalising values in modern knowledge. Universality was initiated for modern times with Descartes 6th meditation which gives the interpretation of nature as the concept grounding the Cogito sum and opening a positive horizon to development through a physiological knowledge. The Cartesian ambition grounds both an idea of the vital and its positive sense – as measure and conditioning of the sign. The parallel is with Descartes 4th meditation for distinguishing the true and the false.²⁰⁴ In this sense, Bichat’s vitalism is a technique of the idea-sign that relates the historical idea of the body to a logic of life.

Historically vitalism could explain properties attributed to life. But medical vitalism also has origins in the Hippocratic idea where reading the sign served the conditioning of nature. The sign had this power held with respect to vital activity to sustain idea of life. It was a necessary conditioning of possible phenomena of life according to an intrinsic understanding of significance in the living which is distinct from a concept of right or an archaic concept of the good. The sign surveys and values a priori of a medical intervention. In this sense vitalism meant the value of the sum of empirical conditions constituting a perception to which the idea-sign attributes possible significance. Historically, the medical sign attributed this to an *energeia*, but

²⁰³ Foucault (1975) p197, see appendix.

²⁰⁴ Descartes (1980) p78, 89. See also Heidegger (1987) vol.4 p111ff

Bichat's vitalism took force as composing an image of the body which gave the radical concept of life for his epoch. He looked to pathology to delimit this economy of life within the series of intermediary states between life and death.

The pathological differential brings the sign of the vital to the idea of life which is inherently ontological.²⁰⁵ But the sign also makes possible the event where the idea itself became eclipsed and therefore functions to separate the sign from a general ontology. The sign gives positivity, but vitalism gives unity to an idea of life. The idea of life means the terms of possible predicates for a concept of the body and governs the articulation of its metaphysics a priori to constituting a new physiological synthesis. The attributes of life, both temporally and in order of composition, use the differential which necessitates an empirical awareness and vigilance within its constituting order to compose or rationalise a new concept of life. In this sense, vitalism gave the perspective an order of priority: this is not a concept in the Kantian sense, but the idea of what was to be ordered in the world; not idealistic but as determining value.

The significance is twofold; in the *Birth of the Clinic* this initiated a new medical Positivism for the 19th century. But Bichat's method of interpretation, derived of Condillac's empiricism, gave the medical sign an intrinsic limit in the constitution of values of life. In this sense it correlates to the basic philosophical problem articulated in *Difference and Repetition* which looked to distinguish an empirical conditioning from an epistemological conditioning.²⁰⁶ The philosophical problem for *Difference and Repetition* is posed around the activity that delimits positive function as a problem of the vital. The activity of the sign has to account for the internalised coordination of value and limits of significance for a cognitive function. This is the function of the combinatory as it extends to a positive domain to describe a series of phenomenal events; Deleuze calls this the delicate problem of constituting a positivity from minimal identity. The product is the concept of the understanding and the limit of its application.²⁰⁷

²⁰⁵ Heidegger points to this as established in Germany from the 1730's by Leibnizian rationalist Christian Wolff, this is what was specifically attacked and suppressed by Kant's Transcendental philosophy, until reinvigorated as a subject of philosophical enquiry by Heidegger. (1987) Vol.4 p154n

²⁰⁶ Deleuze (1994) p13-16, p98. Also Deleuze & Guattari (1994a) p161 where Bichat is the specific example.

²⁰⁷ Deleuze (1994) p95

Difference and Repetition makes a central point around whether Heidegger's turn beyond metaphysics was truly disengaged from a subordinating relation in identity of representation.²⁰⁸ Deleuze understood these as being the terms for displacing the naturalism of sign that follows Nietzsche's 'overturning Platonism.' Heidegger's reading of Platonism defined the problem of method as drawing the distinction between the sensuous and the true.²⁰⁹ To displace a value attributed as true meant overturning an *a priori* ideal image, to which representation was necessarily held as simulacral. Identity in the sign denied or blocked primary distinctions of original or copy. For a positive aesthesis, the status of the sign was to be co-extensive with both senses intended, both true and sensuous. These are the criteria that serve to converge multiple of points of view within an objective domain of the sign to which the function of affirmation serves lived reality. The problem of the combinatory is foregrounding the vital ordering of representations, and it is this ordering that gave a philosophical problem for the natural sign which became central to an Enlightenment Science of Man. In this respect, Condillac's idea-sign substituted for 'natural function' through distinguishing significant differences from external resemblance.

The function of the sign is therefore to reproduce the qualitative divide between modes of resemblance and difference in the idea. Deleuze uses the example of the Platonic sign that prioritises positive identity over difference which he understood to be Plato's "moral vision" of the world. This was because the sign specifically addressed an idea of ordered life of the soul to be governed by concepts of reason rather than a passionate life.²¹⁰ In this sense, vigilance over difference was held as the empirical criterion for attaining a moral point of view. But the implications for a micropolitics of the sign are that true function of the sign is in the activity of selection, making possible the evaluation or test that serves to orientate empirical ideas in their purposive acts. This is a necessary method of orientation in a chaotic world to which empirical function of differentiation of ideas can be considered a vital production. The differential process carries an unstated ontological necessity attributed to the cognitive idea.²¹¹

²⁰⁸ Ibid p65-66, "It would seem not, given his critique of the Nietzschean eternal return."

²⁰⁹ See Heidegger's discussion as 'Truth in Platonism and Positivism: Nietzsche's attempt to overturn Platonism on the basis of nihilism' Heidegger (1986) vol. 1 p151ff

²¹⁰ Deleuze (1994) p127.

²¹¹ This differentiates an idealism from an empiricism. Ibid p41

Historically, Sensationalist method prioritised analogy, but the new medical pathology represented a re-evaluation within the conceptual priorities of the sign. Pathology brought the problem of difference within the phenomenal series around an idea of life but since death could not itself an object of representation with the series of life, the pathological sign served as limit to the transcendental idea of life. The pathological sign separated the historical idea from its vital attributes in what constituted the living. Deleuze culminated his reading of *The Order of Things* with a description of the ‘man-form’ as the composition of ‘forces of the outside,’ which marks the distinction from Kantian orthodoxy and the analytic of finitude. The new historical idea was now characterised as the ‘age of Bichat’ which he claims opened a new fundamental ambition for the positive categories of life incarnate with the 19th century turn in knowledge.

The ‘outside’ carries an implication associated with the legacy of an Enlightenment Science of Man in the sense understood as embodying the ‘anticipations’ fundamental for the new conditions of life. Deleuze claims that Foucault identified a new man-form that appeared by incorporating the death of man; but this was not the loss of sovereign, nor described against a metaphysics of death, but against Bichat’s terms of violent death. A re-organisation of life had historical implications for the micropolitics of life.²¹² The significance of the Positivist turn was of an ‘inner commitment’ to Positivism’s truth which Deleuze held in relation to Nietzsche’s social values. This meant a confrontation of the problems of Positivism with the physiological style diagnosis around the degeneration or strengthening of the species. This is a conceptual point associated with the 19th century thought which *Nietzsche and Philosophy* saw as an internal power, dispersing all value-giving schematics and the important differential element behind Nietzsche’s ‘will to power.’ It also explains the central task behind what Deleuze understood of a Genealogy.²¹³ The general imperative of an unconditioned ‘will to truth’ gave the disposition held to be constitutive of the new systematic of values. Therefore, from the dispute over the Enlightenment Science of Man which is central to *The Order of Things*, the historical context was provoked by the ambition to delimit a legitimate birthplace of the sign. At the start of the

²¹² Deleuze (1988c) p130

²¹³ It makes sickness “harmless to a degree” following Nietzsche (1994) III:16, see appendix.

19th century this was a dispute over the positive and the vital and gave dual possibilities for re-constituting an ambition for a Science of Man in a new form.²¹⁴

Conclusion

The 'rarefied Positivism' delimits an original problem around an Enlightenment Science of Man. Foucault followed what his reading of Kant's *Anthropology* as an empirical perspective on how the positive concept was historically brought into play. This chapter has contended that there was both a critical impetus in Foucault's Archaeology and, after 1968, gave the positive ambitions for constituting the concept mediating juridical power. Beyond the epistemological discourse, Foucault's positive ambitions extended through socio-political discourses with a philosophical legitimacy identified with Kant's legacy which the critical function was integrated within a wider horizon of the felicitous Positivism.

Another perspective has been described in Gilles Deleuze. This focus was on medical discourses identified with the quest for true function in the 'age of Bichat.' This identified Sensationalist epistemology as informing the micropolitics and explained Deleuze's reasoning for attributing intrinsic values to the medical sign to a vitalism. The 'Bichat event' explains discourses on the physical and the moral to which Deleuze attributed the dissolution of an 18th century dispute. The delicate problem around of values of 18th century vitalism centred on constitutive norms following Condillac's idea-sign to which Deleuze saw medical Positivism as a radicalism.

The original problem for an Enlightenment Science of Man has been characterised in its ambition to delimit a legitimate birthplace for the sign. The medical sign carries values both positive and vital and this will serve to constitute the field for a genealogy of a Science of Man during the 19th century in subsequent chapters. The next chapter will look at Foucault's post-critical Kant to accounting for the 'bifurcation' in a practice around the Science of Man; subsequent chapters follow what he considered a pre-critical context emerging from the 'age of Bichat.'

²¹⁴ Deleuze & Guatari (1994a) p133

Chapter 2: Kant's Anthropology and the Science of Man

Introduction

The last chapter focussed on the debate that invigorated French thought during the 'crisis' of the 1960's. This was framed as a historical dispute over an Enlightenment Science of Man. This chapter identifies this with what emerges from a Renaissance Humanism and was taken up as an Enlightenment project. The context for understanding what was meant of an Enlightenment Science of Man takes its initial perspective from the new philosophical and scientific languages debated in the Berlin Academy from around 1740. From the work of Christian Wolff, along with the epistemological problems introduced by Locke and Hume, this gave the Enlightenment debate whose context came to define Kant's ambitions.

The previous chapter described the particular significance that Michel Foucault attributed to Kant's *Anthropology* in relation to an Enlightenment Science of Man. This chapter examines Kant's divided strategy for attaining a rational metaphysics in relation to an 18th century motif of power. The transcendental motif questions the ambition for true and legitimate function of power at the core of a Science of Man. But Kant's earlier allegiance to the Enlightenment project saw him substitute 'modes of thinking' of an earlier psychology for a distinction between metaphysical and philosophical foundations in the domain of experience. In this way, Kant gave an asymmetry that extended into the very possibility of a Science of Man.

As an ambition of a Science of Man, this chapter explores Kant's two responses; firstly, the necessity for a general metaphysics as 'indispensable service' for giving legitimacy beyond conditionality in moral philosophy. Secondly it follows what he addressed as an original problem for a Science of Man through a special epistemology. Foucault identified Kant's ambition to constitute positive ground for inner sense with the late *Opus Postumum*. This hypothesised transcendental possibilities for representing man's world as a logical system of concepts. *Opus Postumum* further distinguished two modes of what a concept of nature could hope to apprehend; firstly, a system of phenomenal experience understood through contemporary interpretations of

animal powers; secondly, a wider domain of force phenomenally evident in the totality of a world-system. While Kant's transcendental system of representations looked to a totality of such empirical observations, by following a historical problem of seeking legitimacy for a Science of Man the *Opus Postumum* is also understood as the transition between 'modes of being' to 'modes of thinking,' serving the hypothesising of the 'ideal archetype of man' who could think the world.

Kant's citizen of the world also appears in the *Anthropology*. This is Kant's late text seen as following his cosmopolitan ideal of the citizen required think the world. But this now entails an engagement with the social, political and historical elements as sustaining evident practices in the world and *Anthropology* is rooted in the difficulty for accounting for a diversity of empirical practices. Kant took his perspective on what man 'ought' to become conscious of in this world 'by rights.' The transcendental doctrine of *Opus Postumum* explored this extended possibility as a world-concept, but *Anthropology* excludes such a unified perspective and returns the central difficulty of constituting the idea behind practices that differentiate the world. The world concept is dominated by history and culture and has an evident lack of unity. *Anthropology* is shown to leave this as an idea to be judged by the 'principle of the future' and taken to prefigure the destabilisation of a unified Science of Man. It a problem identified with the positive practices historically brought into play and the parallel is drawn with the historical emergence of organic theories and their ambitions to apprehend inner experience of symptoms, desires, and evident external purposive forces in *Opus Postumum*. When Foucault framed a narrative of the dissolution of an Enlightenment Science of Man through the ideologies seen as an admixture of positive and vital, this was a domain of empirical practices which served his study of the epistemic shift associated with French Positivism. This will be taken up in the next chapter.

Renaissance Anthropology and Enlightenment Science of Man

The Renaissance was an era self-conscious of opening a new cycle in history, a new approach to negotiating forces of history in which man could play a part. In this context, Anthropology was an emerging discipline that lent itself to a body of knowledge branching out from a philosophical

discourse. But the new perspective did not originate with the observations of contemporary differences, rather, from the study of Roman and Greek antiquity and the cultural contrast distinguishing between past and the present. This was the achievement of the Italian renaissance; its effect was a renewed interest in the ancient world that inspired the study of contemporary cultural differences. By taking the past as the measure of the present, a dynamic reform movement could distinguish in human beings a creativity that grounded its shared activities as a unifying force. In the second half of the 18th century, the contemporary concept of man embodied the idea that subjects were capable of being enlightened.²¹⁵

In the Enlightenment, Anthropology stood between the range of human knowledge; for example, psychology as the discourse on the rational soul, and its counterpart in the body to which anatomy reveal the structure of man. Anthropology also offered aspirations for a new science extending a view as social anthropology historically parallel with an anatomy of the *polis*. This dissection of the body politic meant that an Enlightenment Science of Man could transform arguments on body and soul into a science of mind/body relations, beyond earlier reservations about the values of Cartesian mechanism.²¹⁶

From the early 18th century, anthropology stood as a natural history of human nature following the impetus for an enlightened science which drew on a broad psychology, a metaphysics of soul and extended medical practice. The search for a natural unity led anthropological practitioners, through the analytical approach, to a division of humanity into races, sexes, temperaments. Fuelled new intellectual fascinations with wild children, the blind, orang-utans, exotic races etc, this developed into a battleground of ideas. By the early 19th century, the impetus behind such a Science of Man had the paradoxical effect of dispersing the systematic approach initiated by 17th century thinking. The expansive and fluctuating range of intellectual activity lost the earlier

²¹⁵ Being modern not only meant moving beyond the dark ages but held the promise of the future knowledge that could to restore the more illuminated times of antiquity. The Renaissance humanist was an example of whom he holds that the cult of antiquity as a form of activism. Calinescu (1987) p22. For general texts see John Howland Rowe (1956) pp1-20, Margret Hogden (1964), Alfred Haddon (1934)

²¹⁶ Haddon cites *Anthropologie Abstracted; or, the idea of human nature reflected in the brief philosophical and anatomical collections* (1655) “Anthropologie, or the history of human nature, is, in the vulgar (yet just) impression, distinguished in two volumes: the first entitled *psychologie*, the nature of the rational soule discoursed; the other *anatomie*, or the fabric of structure of the body of man revealed in dissection...” cf G. A. J. Rodgers (1998) pp79-84

sense of unity. Yet in the 18th century, a Science of Man can be taken as dominated by a fundamental idea, the sense that science and reason could be taken to define man's higher faculties.

Two Approaches to an Enlightenment Science of Man

In the early 18th century, two strong impetuses for a Science of Man can be characterised through the philosophical methods of John Locke and David Hume.²¹⁷

Locke's Sensationalism offered to extend a method to free the human body from dogmatic thinking. Locke was a physician and his *An Essay Concerning Human Understanding* of 1690 traced 'symptoms' laid out after an anatomical fashion that ground his intended practice for a Science of Man.²¹⁸ Moving beyond Descartes break with scholasticism, the primacy was given to an epistemology that framed a history of human understanding and implied transforming the metaphysical discipline into a psychology. Locke's sensationalism offered an empirical doctrine of knowledge as base for a new rationalistic theory of the real. This was limited only by human faculties and their abilities to make empirical deductions. The question was of progressive adaptation,-

"The first step to towards satisfying several enquiries of the mind of man was very apt to run into, was to take a survey of our own understandings, to examine our own powers, and see to what things they could be adapted."²¹⁹

Being a physician meant an awareness of interpretive difficulties as the problem of total comprehension of the data of sensation.²²⁰ The physician emphasised practical skills of observation, using experience as the basis for judgement, but Locke was also looking for the possibilities of moving beyond an aporetic metaphysics. Being a Newtonian, despite shifting away from a science of certainty, meant the progressive ambition towards a deduction that could forge a world whose measure was man. Historically, the measure of the man drew on a physiological discourse for a natural explanatory schema, but the new anthropology also

²¹⁷ See Cassirer (1955) xi

²¹⁸ See P. B. Wood (1994)

²¹⁹ *Essay*, Locke (1975) Introduction, Book 1, Chapter 1, §7

²²⁰ See Foucault (1970) p82

introduced new possibilities for analysing representations according to the necessarily elemental and successive orders of language. This was an idea, especially influential in France where Etienne Bonnot de Condillac set out to redefine metaphysics as the study of mental operations extended through degrees of certitude towards a 'new language.' His initiated influential projects taken up under the broad definition of a 'Science de L'homme' during the French revolutionary era.

Another example from this epoch was David Hume. His 1739 *Treatise on Human Nature* upholds the central premise that all sciences are derived from their relation to a human nature, -

“Tis' evident that all the sciences have a relation, greater or less to human nature, and however wide any of them seem to run from it they still return back by one passage or another. Even mathematics, natural philosophy and natural religion are in some measures dependant on a science of man: since they lie under the cognizance of man and are judged by their powers and faculties.”²²¹

The pivotal question was the a priori attributed to the principle of causality. Hume's emphasis on the practical nature of ideas was in their values being distinct from theoretical ideas, he concluded that synthetic reason could be merely generalised belief and given through natural instinct. This meant that Hume's scepticism left “human nature as the only Science of Man.”²²²

As a programmatic approach to a philosophy that was allied to a method moving “from a kind of scepticism to kind of positivism,”²²³ which would not be uncharacteristic of later schools of Positivism in its intention to turn a polemical cutting edge to both realist metaphysics or religious dogmas. Hume's central criticism around the originary concept of causality was intended to question the judgement concerning perceived qualities but also served to undermine anything attributed to divine orders in nature. Such scepticism towards the *a priori* not only undermined proofs of God but also any existence of order in nature from which rational principles could be derived. By displacing the possibility of inferring the infinite from the finite, Hume's thinking can be considered positivistic in another important sense; it does not advocating against an affirmative judgment but rather strategically brings negative judgements to bear on every kind of

²²¹ *Treatise*, Hume (1978) Intro XV

²²² *Ibid* p273

²²³ Expression from Deleuze (1991) p31

metaphysical reality.²²⁴ Here is the paradoxical anti-positivist polemic whose effect was of clearing the way of metaphysical concepts, but whose polemical destruction of any finite of knowledge positively implies a possibility of ‘true’ knowledge, not unlike a “compelling power” of the infinite.²²⁵

What a later Positivist spirit takes from Hume was the rejection of the absolute legitimacy of induction in favour of the question of values in the relationship between experience and knowledge. The question of value produces, unsurprisingly, a variety of often contradictory responses; for example, by uncovering a concept of man, firstly from a physiological approach and secondly, through a pragmatic approach, may inform with differing values. The strong connection with an emerging anthropology during the 18th century gave such disputes another of Hume’s legacies; the relation to a political thought. Hume’s emphasis on an immanent practical approach, upheld as qualitative concepts over quantitative sciences, informs his particular approach to a Science of Man. This attempted to view man’s natural physical and social environment with the positive ambition of transforming concrete conditions of human existence through the accumulation of pragmatic knowledge. Here he foregrounded a specific task behind the programmatic study of the human needs. The pragmatic method overlaps with the systematic method offered by Locke’s empiricism and appears therefore that both are anti-positivistic in one sense and positivistic in another. This is a paradoxical characteristic which is often also the feature of later Positivist thought.

In both instances, what was important was that man was held to have a fundamental ‘nature.’ David Hume expressed this as, “it is universally acknowledged that there is a great uniformity among the actions of men, in all nations and ages, and that human nature remains the same, in its principles and operations.”²²⁶ And Locke wrote, “Men, I think have much the same for natural endowments in all times.”²²⁷ By the mid 18th century this concept of human nature crucially revolved around what could be attributed to this universality. In this era this was underpinned by the influence of Newton, Bacon and Descartes, but also what anthropology looked to sustain

²²⁴ Kolakowski (1972) p50

²²⁵ Ibid p50

²²⁶ *Enquiries*, Hume (1975) §65 p82

²²⁷ *Works* Locke (1997) vol.II p361, ‘Conduct of the Understanding’

through its exploration of the increasing varieties of customs and institutions indicating the diversity of the world appearing through increased travel outside of Europe.

To this end, whether it was attributed to pragmatic powers of reason or pursued through a question of sensible experience, the diverse strands of an 18th century Science of Man pursued this as a common question of what could be positively upheld as a ‘truth’ of man. The question of truth focussed on the notion of man’s origins. In 1762, Johann Gottfried Herder attending a lecture in Königsberg, could note that Kant understood this as a method which,-

“in order to distinguish what is art from what is nature we must push towards the origin, just as we are accustomed to distinguish traditional beliefs from certainty. We would better need to study the consciousness of primitive tribes and this is far better than ours which is a product of art. Rousseau has examined it.”²²⁸

The pursuit of origins was a method of enquiry by which a Science of Man could proceed and a device for interrogating concepts of human nature. By specifying constancies as the positive element, as both necessary and conjectural, this countered assumptions of divine origins. This was understood by the more philosophically inclined early researchers. Rousseau, for example, noted as much in his second discourse,-

“The researches that we may enter into on this subject must not be taken as historical truths, but merely as hypothetical and conditional reasoning, designed more properly to throw light upon the nature of things rather than showing us the actual origin, like the reasoning our physicists engage in all the time in the formation of the world.”²²⁹

Hence, when Rousseau attributed this to a difference between man and animal, he intended a sharp distinction between the moral and the physical. By placing an idea of man above nature it emphasised man’s capacity to create artificial worlds or the second nature. This followed Condillac, who also implied as much grounding his later *Logic* (1780) through his earlier *Essay on the Origin on Human Knowledge* (1746). But in theorising this as a sharp distinction, Rousseau was particularly influential for Kant in confronting the legacy of Christian Wolff and his followers. Moving against a systematic approach developed around a Science of Man, Kant’s

²²⁸ *Auf Grund der Nachschriften* Johann Gottfried Herder Köln [(1964) p92] cf Hans Aarsleff (1982) p159.

²²⁹ Second Discourse, Rousseau (1997) p132

approach followed a positive ambition to modify 17th century ideas on psychology and anthropology through epistemological practices that characterised 18th century debates.

The Science of Man in Kant

Locke and Hume are indicative of the epistemological problems around an analytic of sensation and sensibility as pursued by a Science of Man in the 18th century. The broad intersection this thought had an importance for Kant from the 1750's. This appears as a confrontation of values derived from 18th century aesthetics in relation to a systematised logic; the problem of *a priori* or *a posteriori* knowledge.

Later, *Critique of Pure Reason* described Locke's ambition for a rational science coextensive with the realm of the 'real' as being dependant on a 'true method.'²³⁰ Kant took Locke's method as prone to transcending limits of experience, opening to a fictitious "genealogy" and given to new dogmatisms or even indifferentism.²³¹ On the other hand, Kant took Hume's sceptical method as belonging to "a species of nomad, despising all settled modes of life..."²³² However, earlier when Kant pursued the broad themes of a Science of Man in the reflective essay *Observations on the Feeling of the Beautiful and the Sublime* (1764), he intended a contribution to the general analysis of feelings and their values, grounded in a reflective historical observation rather than a strict philosophical enquiry. Here Kant was following the wider motifs and ethical thinking of the time in his discussion of ideas of temperament discerns relations between aesthetic feelings and social order. His consideration was how aesthetic feelings can constitute a principle, *Observations* finds,

"as a consciousness of feeling that lives in every human breast...the feeling of beauty and the dignity of human nature...first as a ground for universal affection...second as a ground for esteem...Only when one subordinates his own inclinations to one so expanded can our charitable impulses be used proportionately and bring about the charitable being that is noble virtue."²³³

²³⁰ "...of advancing knowledge is by considering our abstract ideas." *Essay* Locke (1975) IV vi p16,

²³¹ Kant *CPR* Aix

²³² *Ibid* Aix

²³³ Kant (1960a) p60

The grounds for this universality of feeling and its status as a principle of virtue, was following his well documented enthusiasm for Rousseau during this period. *Observations* accounts for a turn away from scholarly elitism through a sympathy with Rousseau's call for philosophers to become educators of mankind. Kant was following an Enlightenment ethos, later to be expanded as the basis for his moral philosophy. The notes made in his own copy of *Observations* describe Rousseau as proposing the concept of 'natural man' as the metaphysical ideal, for inferring what was wrong with civilised man. Kant comes to understand this as the synthetic procedure which can be taken in the sense of the regulative idea, but defines his own strategy against this, although retaining its principle aim.²³⁴

“Rousseau: he proceeds synthetically and begins from the natural human being. I proceed analytically beginning from the civilised human being.”²³⁵

In this way, Kant understood both analytic and synthetic approaches as diverse strategies aimed at the concept of the civilised man. It also marks the division for Kant between a practical philosophy derived from an observational science, and the theoretical needs for a speculative metaphysics.

This is the sense in which Kant went on to pursue diverging strategies: firstly, he limits a concept of 'natural man' by transposing Rousseau's political community into a transcendental world where the free-willed individual can be given full autonomy. This stance stays close to Rousseau's concept of freedom in taking an ethical self as given to possibilities of intervention through a categorical imperative. Rousseau had given Kant an alternative model of intellectual practice in relation to the wider current of the Enlightenment. In the Critiques, this appears as the commitment to an ideal limit of human reason by defining a transcendental concept of the thinking subject to be conditioned by the material world, yet whose power is logically prior to the senses.²³⁶

²³⁴ See Cassirer (1963) p20

²³⁵ Kant (2005) p3 AA:2:207-8

²³⁶ Following Cassirer (1963)

The second strategy has been described by Foucault as a ‘research into the Gemüt’ and associated with Kant’s later *Anthropology from a Pragmatic Point of View*.²³⁷ This saw Kant depart from ‘observed facts’ of *Observations* while retaining the possibilities of representation as a communicable and sociable activity. This general field of representation was conditioned under a concept given to a wider anthropological consciousness; its ‘special epistemological structure’ that stood behind both Critique and *Anthropology* as general conditions for a determining subject. This gave a general problem for any Science of Man. While Critique places a transcendental freedom as the speculative concept a priori both to a concept of nature and the concept of the thinking ethical subject, *Anthropology* did not see an ethical subject as a thinking and unified being of the Critique. In *Anthropology*, like in *Observations*, the classification of the anthropological domain gives an observed network of human tensions which is attributed to the Gemüt. The special epistemological structure stands as a principle of limited freedom, the schema mediating both a concept of nature and a concept of freedom.

While the split in the thinking of the concept of ‘natural being’ can be identified as early as the 1770’s, it is the late *Anthropology* where Kant succinctly distinguishes the division between an intellectually systematised knowledge and an actualised knowledge.²³⁸ He associated this with two types of research,-

“Physiological knowledge [which] aims at what *nature* makes of man, whereas pragmatic knowledge aims at what *man* makes, can, or should make of himself as a freely acting being.”²³⁹

The latter division appears in Critique as practical reason, and is designated through a relation to an imperative. But *Anthropology* retains the earlier notion of artifice or device through the Gemüt. It is this division that produces the two crucially different perspectives; a analytic of the imperatives of reason of the ‘I think’, and a concept of the synthetic network preceding the subject.

²³⁷ Foucault describes this as the research into the Gemüt. Foucault (2008)

²³⁸ By Foucault (2008) p19

²³⁹ Kant (1974) intro p3

Kant introduces *Anthropology* in terms of an activity of the citizen of the world developed under the ‘nature’ of cosmopolitical bonds through the possibilities of an inner sense.²⁴⁰ But *Critique of Pure Reason* maintains this as a problematic that cannot be justifiable as a pure reason. Here Kant looked to a future science for the “establishment of its own in a complete anthropology, the pendant to an empirical doctrine of nature.”²⁴¹ This problematic ‘nature’ was, in the later *Anthropology*, strategically restricted to a question of an empirical Science of Man. He retained all possibility of mapping “the consciousness that man experiences” that are characteristic of the cosmopolitical ‘object.’²⁴² But while the ambitions of the dialectic in the Critique displaced empirical experiences, *Anthropology* remains such an admixture that offers only successive possibilities for knowledge available to the object on the empirical level.

As two intellectual strategies derived of the problem of a Science of Man, these can be seen to move apart in Kant’s texts around 1770-1780. On the one hand, there is the interrogation of the ‘I think,’ the synthetic function of the Cartesian ego and its logic; on the other, questions of evident types in an anthropological domain, appearing as evident repetitions in a world system. This left the possible uses of reason aligned only with the aspirations for a Science of Man and shifted the debate to a dispute over metaphysics.

Newtonians and Wolffians: The Dispute in 18th century Metaphysics

Kant began his career as a student of the Leibniz-Wolffian philosophy. The fundamental divergence from followers of Christian Wolff emerged through the Newtonian approach, which particularly fuelled a conflict at the Berlin Academy of Science during the years 1740 to 1760. Under the directorship of French Newtonian, Pierre-Louis de Maupertuis, the debates surrounded the nature of Wolffian metaphysics, as a system extending a schematic idealism into historical, philosophical and mathematical branches of human knowledge.

²⁴⁰ Ibid p251, the cosmopolitical discussion.

²⁴¹ Kant *CPR* A849/B877

²⁴² Kant (1974) §24

Wolff's philosophy held a status as a national intellectual product, subordinating other fields within a framework that sought to encompass German religious and political thought. It's systematic considered Newtonian philosophy as scientifically narrow in a sense not worthy of a general philosophy. In 1740, Fredrick II of Prussia wanted to appoint Maupertuis and Wolff joint leaders at his Berlin academy, they represented two opposing brands of scientific philosophy. Wolff declined the offer and, in the event, the Swiss mathematician and Newtonian sympathiser Leonhard Euler gave the academy its Newtonian grounding. Subsequently this came into conflict with the Wolffian system with its theological and political implications. Even within the academy, allegiances of its members were divided. From 1745, the first of the famous series of essay competitions began to explore this division and Maupertuis initiated these through an invitation to discuss the controversial topic of Monads. It initiated a long running and heated debate around a Newton-Wolffian controversy.²⁴³

Kant entered this debate in 1756 with the essay on *Physical Monadology* which was his attempt to redress the ambition of Leibniz/Wolffian metaphysics in the light of Newtonian natural philosophy. Its central division was between non-spatial and non-temporal monads, whose status was determined by internal principles of active force, as contrasted with Newtonian absolute space-time extending continuously as an external framework for all laws of interaction. The implications of Newtonian science were exemplified by the paradigm of universal gravity, i.e. moving mathematically from phenomena to principles of natural bodies. Kant was arguing for a revised metaphysics which needed to be subordinated to certain results of the exact sciences. He addressed the prize question of the Berlin academy in 1764 with *Enquiry Concerning Clarity of the Principles of Natural Theology and Ethics* as a supporter of the 'Newtonian/Euler' position of a synthetic mathematics. This moved against any general analytic metaphysics that proceeded from obscure concepts and ordinary notions of necessity and freedom, body and time, etc. Kant was aiming at avoiding such a priori definitions, and instead looked to establish a regressive metaphysics advancing only from established concepts delimited by exact sciences.

²⁴³ See Ronald S. Calinger (1969) pp.319-330.

A more specific differentiation appeared in *Negative Magnitudes* (1763). This distinguished two uses of mathematics in philosophy and was aimed particularly against the Wolffians. Kant now presented a modified Newtonism which found its key idea in taking the certainty of experience to inform the ‘material principles’ of human reason.²⁴⁴ By following the basic laws of dynamics, this was to express a schema of universal coexistence that constituted a domain of derived properties that related to a schema of a general intellect or understanding. This schema was important in a new sense; space and time were presented as ideal, and given through two distinct principles of human cognition: an intellectual faculty of understanding and one of sensibility which formed the two branches of human knowledge. Against such ideality, the limit of subjective knowledge could be brought into question and given as something that would only be securely grounded by exact science. This domain had radically revised conceptions of space and time, which brought into question the interplay of intellect and intuition: the formal logic of understanding confronted metaphysical relations to an actuality which was limited by subjective finitude.

The significance in defining this limit marks Kant’s departure from a general analytic tendency of the day. Kant now held a logical negativity against the affirmative of an originary given a priori. In this respect, it is his *Negative Magnitudes* essay that makes the crucial new distinction between a logical nothing and a physical nothing,-

“Inner feeling tells us that displeasure is more than a negation. (lack is not a displeasure)...but a positive sensation....positively opposed to pleasure....a positive ground which wholly or in part cancels it out. On the other hand a lack of pleasure is called indifference, whereas the opposition between pleasure and displeasure is called equilibrium.”²⁴⁵

In distinguishing between an absolute notion of indifference and a relative notion of an equilibrium, Kant leaves only the second as negation proper, while the former indicates only an absence. By proceeding from this relative notion, he could with certainty claim that all real oppositions must have real predicates, and that it is only these predicates that can be taken as positive.

²⁴⁴ Kant *Negative Magnitudes* 2:182, see also Rockmore (2001) p37

²⁴⁵ Ibid 2:182, Kant (1992a) p220

Real predicates mean both a positive desire for an object and its opposition, the feeling of aversion in its opposite, a positive displeasure. Both are qualitative aspects and exist “because pleasure connected with it, is the ground of desire being satisfied.”²⁴⁶ It is the relativity of this ground that serves to delimit the distinction from the perspective of absolute understanding and is contrasted with the ambitions pursued by the analytic practice of the era. This leaves Kant asserting that the law of identity and difference has only a relative relation to real ground which can be given only through speculative concepts and therefore “can in no wise be judged.”²⁴⁷

With this Kant introduced the notion of a logical horizon. Ground appears as a ‘logical horizon,’ by distinguishing itself from real ground in the absolute sense. This defines the concept as a logical expression, rather than as an absolute,-

“the relation of real ground to something, which is neither posited nor cancelled out by it, and cannot be expressed in a judgement....only expressed in a concept.”

It is because speculation is the source of human error, and error marks the finitude of understanding, that the concept operates only through logical contradiction. Although Kant finds that this concept can be regressed through logical analysis, the positivity of the whole, is “the single unanalysable concept of a real ground, the relations of which cannot be rendered distinct at all.”²⁴⁸ Therefore, the distinction that defines the order of positive affirmation in the domain of predicates, is the negative - as a second order affirmation – and this gives an active disjunctive between a concept’s necessity and its contingency. The distinction is between the real ground and its logical ground. It restricts the interpretive judgement to a logic, while its positivity is what the concept maintains through the ambition to condition a given domain.

²⁴⁶ Maupertuis called pleasure and displeasure a preponderance, but Kant notes this is “not humanly possible” *Negative magnitudes*. Ibid p238

²⁴⁷ Ibid p238

²⁴⁸ Ibid p241

Scepticism in Kant's *Logic*

This is the separation that appears in the Transcendental Aesthetic of *Critique of Pure Reason* where sensibility gives both an intuition and its object.²⁴⁹ The doctrine was that sensation ambiguously retains something as a psychological effect, whose real element the transcendental judgement aims to make distinct.²⁵⁰ This informs the central difficulty behind *Critique of Pure Reason's* aim for more 'positive' values given as concepts of the understanding, which are to account for both aesthetic experiences and a rational knowledge. However, Kant notably limited values of sensibility at the start of the Transcendental Aesthetic following the "abortive attempt made by Baumgarten" for defining a concept that is integrated under an aesthesis.²⁵¹

Kant made his radical distinction by bringing the critical treatment of judgement under rational principles of logical analysis which distinguished a systematic formal logic from a general aesthesis. When Alexander Gottlieb Baumgarten used the word aesthetics to mean taste or 'sense' of beauty he gave the word in its modern usage; earlier aesthesis referred to an ability to apprehend according to bodily senses and was a 'sensitive knowledge,' given as something 'indistinct.'²⁵² Baumgarten defined 'taste' as meaning an ability to judge according to the senses, rather than intellect. Historically aesthesis drew on feelings of pleasure or displeasure, but Baumgarten's science of aesthetics would offer the deduction of rules or principles of an individual taste. Taste was the domain, "fusing together of elements" of confused perceptions whose status was beyond the reach of the concept and a pure logic. Yet, this sensitive knowledge of the 'dark' and the indistinct, could be brought under a higher reason through 'powers of the soul,' which Baumgarten subsumed under a Leibnizian framework taken to express a *vita cognitionis*, or a 'life of knowledge.'²⁵³ But the *Critique of Pure Reason* opposed taking this speculative domain of sensibility as the basis of pure knowledge. Kant had already explored in *Observations* how feelings constituted a principle of virtue and aesthetics values, by relation to

²⁴⁹ Kant *CPR* A15/B29

²⁵⁰ Norman Kemp Smith (2003)p81, *CPR* A271/B327

²⁵¹ Kant *CPR* A21

²⁵² Alexander Gottlieb Baumgarten in his *Metaphysica* of 1739 § 451

²⁵³ Cassirer identifies this with Leibniz, *Meditations on Truth, Cognition and Ideas*. Cassirer (1955) p338-342

an ‘image of perfection.’ By the 1770’s, his *Logic* lectures reveal how Kant was taking a more rigorous approach to what could be attributed to sensibility and experience.²⁵⁴

Firstly, this meant applying an active negative disjunctive as the ‘distinctness’ (as the logical cognition) which served to separate it from an order of aesthetic feeling (Baumgarten’s lively ‘indistinctness’).²⁵⁵ Although Kant had earlier considered Baumgarten the “exemplary analytic thinker,” by insisting on this radical difference between an analytical logic and an aesthetic sensibility - a difference in kind rather than difference by degree - he makes the distinction between “making our cognitions logically perfect, [and] another that makes our cognition aesthetically so.”²⁵⁶ Although Kant rejected his aesthetic theory, he maintained as ‘exemplary’ Baumgarten’s ambition, which was to be pursued beyond this sharp divisions of a logic and an aesthesis.

This is illustrated already as an ambition evident in his *Logic* lectures of the 1770’s (Blomberg lectures).²⁵⁷ Kant was taking the apprehension of an aesthesis in terms of an active intuition, whose possibility was in making a productive distinctness (“the distinctness when we can distinguish well the mark of what we intuit”). Aesthesis presented the possibilities of positive values in relation to a judgement beyond a purely logical one - “we achieve distinctness in intuition through more attention *per synthesin*.” The activity of aesthesis gives sensation its action of ‘making distinct,’ rather than just a passive affection, or something simply given to a concrete sensation, and was an activity that makes a judgement possible. However, Kant deferred any elaboration on how aesthesis could provide such conditions of possibility to logical judgment on the grounds that this was beyond the limits of a strict logic.²⁵⁸

Beyond the radical distinction evident in the logic lectures, Kant retained an ambition for producing this positive qualitative difference. But he emphasised the need for abstraction and active combination of elemental data, to be effected through ‘coordinating marks’ which

²⁵⁴ Broad account in Zammito (2002) p111ff

²⁵⁵ Kant (1992b) p29

²⁵⁶ Ibid p31

²⁵⁷ Ibid p29

²⁵⁸ Ibid p176

themselves could constitute a communicable ‘distinctness;’ these constituted the universality which Kant regarded as the necessary purpose of a logic. Coordinating marks relate, in a relative way, to a more positive knowledge in the Lockean sense (“Locke made an effort to show that none of our objects of experience can ever be absolute but *completudo comparitiva*”²⁵⁹).

However, since Kant also held that cognition of experience could become profound only when subordinated to logical rules, his focus was on the subordinating action of judgement whose activity gives approval, withdraws approval, or withholds of approval. Kant accords this to positive, privative, or negative. An affirmative judgement can increase our cognitions and are thus positive, while the negative serves to avoid error.²⁶⁰ The importance of the coordinating marks was to distinguish a logic from what previously was accounted for by ‘taste,’ or what Baumgarten was delimiting under laws of sensibility, and defined by an ‘empirical psychology.’ Laws gave judgement its logical relation between subject and predicate, the importance of defining this aesthetic activity through its logical link, or *copula*, extends to the domain of the ‘*concepti subjecti*.’²⁶¹

This domain now accounted for the positively grounded ‘mark’ in its natural relation to distinctness. The *Logic* was concerned only with the distinction of identity and difference, yet beyond these values, what the *copula* derives from intuition introduced the problems of purposive reflection. Reflection was an affirmative action by which *Critique of Pure Reason* introduced its discussion of concepts of reflection employed in the act of judgment.²⁶² But these no longer have a direct reference to the object but are concepts used for orientation and applied to both understanding and intuitions for a judgement held prior to, and guiding, an action.

It is because Kant sees human reasoning as essentially metaphysically, functioning to condition an animal existence, that the primary conceptual difficulties arose from what was earlier expressed in the *Logic* (Blomberg). The significance for *Critique of Pure Reason* was that both negative and positive forms appear as two lines of thought that appear behind the Transcendental

²⁵⁹ Ibid p97

²⁶⁰ Ibid p123

²⁶¹ Ibid p221

²⁶² CPR A262/B318

Dialectic. Further on, in the Architectonic of Pure Reason, Kant left the nature of this relation between an indistinct idea of the unconditioned and its limited rational expression, only as a “peculiar unity.”²⁶³ However, it was specifically differentiated from an anthropology, which he later returned to as a research into inner sense, as the nature of the *Gemüt*. However, in *Critique of Pure Reason* the specific problem was a metaphysics that thinks how objects of outer space relate to the concept of the Cartesian subject. This subject is the peculiar a priori unity of the “I think,” and Kant left the nature of this *a priori* as the task for a future metaphysics to study.²⁶⁴

Aesthetics and Power in Kant’s Metaphysics

The *Critique of Pure Reason* also proposed metaphysics as the study that could distinguish itself from an empirical psychology. The latter was the practice that belonged to a rational metaphysics “no more than empirical physics does.”²⁶⁵ Aesthetics presented the particular difficulties for the study of consciousness and this can also be traced to the early 1770’s through Kant’s lectures in psychology. Here a rational psychology took its ambition in accounting for an intellectual activity attributable to an inner sense and given to the Cartesian “I think,” which was contrasted with what empirical psychology took as ‘I perceive.’ Working from Baumgarten’s *Metaphysica* as a textbook, Kant taught that an outer sense was clearly distinct from the thinking principle, and which comes together through the soul. It is this perception which describes “a knowledge which belongs to me...a representation of my representations...a self perception,”²⁶⁶ which Kant took as the apperception informing a rational psychology. Rational psychology was the study of inner cognitions as they far as they can be given as concepts of reason to the thinking subject.

Kant’s *Lectures on Metaphysics* show him differentiating the active representations of the senses, from an empirical psychology which meant passive affectivity. This had its parallel with what *Logic* distinguished between the distinct or indistinct. But the significant difference is that *Metaphysics* frames its discussion in terms of higher or lower functions of the soul. In these earlier lectures this function was understood as a power which was either self-active or passive;

²⁶³ CPR A849/B877.

²⁶⁴ CPR A848/B876

²⁶⁵ Ibid A848/B876

²⁶⁶ Kant (1997) p44-46

higher functions of the intellect are active, while sensibility is the passivity of the lower function. It is a distinction which has a significant relation to what *Logic* excludes from its discussion of the thinking consciousness as an aesthetic sensibility. In his psychology, he holds that sensible representations can “either be given or made” through the activity of the thinking consciousness, or attributed to the spontaneity of a “formative power.” Such a power is not the same as the power of logical understanding; a “formative power” is attributed to both higher and lower functions of the soul.²⁶⁷ As such, power here accounts for a relation to an indistinctness, and appears as an unconscious of perception. The significance of this formative power is that Kant thereby avoids a relation of equivalence to the material doctrine of pure sensation.

However, the difficulty of such an unconscious power introduces a converse problem, that of ‘subreption.’²⁶⁸ Subreption meant a reflection of an empirical habit that confuses sensible intuition with something from a domain of discursive logic: this is no longer a distinct cognition. On this basis, a distinction became dependant on the question of judgment. This was the measure discussed under powers of the soul, and historically attributed to the drives of pleasures and desires, both basic but diverse powers. But the notion of a psychological soul, by definition a unity of such powers rather than a distinct principle, related these diverse powers to the ‘I think’ of the Cogito which demonstrated a more basic power that arose from the determinations of conceptual thought. The *Metaphysics* lectures do not show Kant elaborating on this; the question of this unity was again retained as a future task of a philosophy “so far as it is possible.”²⁶⁹

These early lectures in *Logic* and *Metaphysics* indicate what the *Critique of Pure Reason* was bringing together under a more specific goal, delimiting what could be understood of the peculiar unity through a problem of formal logic. The Transcendental Dialectic relates this as two fundamentally opposed forms of knowledge, one a constituted finitude of the *Logic*, another the unconditioned but creative intellect, understood as retaining the 18th century motif of power. This

²⁶⁷ Ibid p49

²⁶⁸ Ibid p51-52

²⁶⁹ Ibid p75

was the infinity that an ‘intuitive intellect,’ immanent and formative, carries in its ambition for knowledge which Kant played out between the ‘natural’ and ‘ideal’ aspects.²⁷⁰

Power/Knowledge: Transcendental Analytic and Synthetic Judgement

In the critical context, this relates to a distinction between the modes of judgement which distinguished the transcendental doctrine of knowledge. What the *Critique of Pure Reason* pursued as the possibility of a rational metaphysics, was the ambition for a transcendental knowledge which gave meaning to an analytic judgement reproduced in grounded concepts. Judgement selects by defining its subject-predicate under the relation to a particular concept. Its empirical nature, defined by aesthetic activity under the domain of a ‘*concepti subjecti*,’ upholds its positive reason by relating the ground of the concept to possibility of the judgment. But while a general logic gives this transcendental ground, the power to constitute the judgment becomes the question of transcendental principles. Kant said that the analytic judgement thinks only according to the concept, but this was not a true object of experience. Rather, the distinction between the analytic and synthetic was understood through what the negative separates concepts out by virtue of identity within reproducible concepts; the analytic judgment can be given only by such identity. But identity was grounded by positive difference, whose relation was to the indeterminate. In this sense, the negative was not concerned with metaphysical principles but with the reasoning which distinguishes *a priori* from *a posteriori* knowledge.²⁷¹

It is important to distinguish an empirical logic from what was offered by scientific knowledge. This is because the positive sciences were exemplary in being universalised domains that separate historical admixtures into a constituted *a priori* knowledge. One could see the ambition for a Science of Man in giving a transcendental perspective on an empirical domain in general: a transcendental logic as a general logic. In this sense it aims at both a transcendental knowledge and a transcendental power. But the question that Kant brought to an Enlightenment Science of Man was delimited to legitimate unity beyond the particularity of subject-predicate relations. While a rational metaphysics studies the functional knowledge that could relate the inner

²⁷⁰ CPR A839/B867

²⁷¹ Ibid A148ff. And discussion on general logic in A55/B79.

experience of outer possibilities, the transcendental principles gave the objective for a Science of Man merely because such principles were posited as grounding its true and legitimate function.

The problem of empirical knowledge was precisely this historical admixture given according to diverse principles. Because science was taken to displace an analytic knowledge with a new synthetic knowledge, the ambition for transcendental logic was of the substitution of an empirical analytic for a pure synthetic understanding.²⁷² The difficulty of a new synthetic knowledge is that it draws on the problematic principles given to the source of such synthetic judgments beyond the logical horizon of the grounded concept, -

“But in synthetic judgements I have already advanced beyond the given concept, viewing as in relation with the concept something altogether different from what was thought in it. This relation is never either a relation of identity or contradiction; and the judgment, taken in and by itself, the truth and falsity of the relation can never be discovered.”²⁷³

Because Kant’s ambition for a pure understanding requires that “...the conditions of the possibility of experience in general are the same as the conditions of the possibility of the objects of experience,”²⁷⁴ he premised conditionality on mathematical principles of Newtonian dynamics. Importantly, this was not axiomatic in itself: the issue was rather that he was following this as the principle by which a power gives unity in representation through concepts of understanding. This power was the function of understanding, of organising according to positive categories of experience.

The positive categories follow from Kant’s table of judgment. (A80/B106). This characterised a faculty of rules for defining the inner nature of human understanding and the unity brought together actively through the “I think.” (A126) While the representational activity of the thinking ‘I’ uses concepts that derive their power of understanding from a claim on a reality, it is the positive categories that delimit a domain of constancy as a schematism, or ‘art.’ It is this

²⁷² *CPR* A237/B296

²⁷³ *Ibid* A154/B193ff

²⁷⁴ *Ibid* A158/B197. Heidegger comments, “whoever understands this principle understands Kant’s *CPR*” Heidegger (1985b) p183

categorical function that ultimately remains hidden.²⁷⁵ The question of the activity of a power to relate sensation - as the ‘matter of appearance’ - to inner sense, by a conceptual ‘filling out’ or reduction to nothing as the continuous production of states that could index a relation to Being itself. (A20/B34) This meant that while the formative power of synthesis determined the magnitudes of space as well as its temporal qualities, along with their relations and modalities, yet the conceptual succession and coexistence of such *a priori* determinations in this time-series was also necessarily limited and ultimately retained “no other possible employment” other than the empirical. (A146)

This gives the schematism the power of conditioning a purely logical unfolding of reason, while the “peculiar unity” of the architectonic was the empirical element which *Critique of Pure Reason* described as “due to sensibility.”²⁷⁶ In this sense, the problem for Kant’s Science of Man was that it retained the legacy derived from of 18th century aesthetics, which he had earlier characterised in Baumgarten as an ‘abortive analytic.’ Drawing on the “merely empirical,” which was a theory of taste derived from the historical doctrine of pleasure and pain, Kant did not think could furnish apodictic laws in terms of the science of the day (A21n). However, it is in the *Critique of Judgement* where Kant shifts his perspective on this ambition. The ambition was to reflect on ‘something’ that necessarily must be accounted for, and in this he returned to conceptual possibilities of perception through considering the twin concerns of ‘art’ and ‘organic form.’ This return was also to the ambition of discovering the conditions of ‘a nature’ being judged under a power of judgment. It meant the ambition of discovering principles behind positing the natural concept.

The *Critique of Judgement* extended the problematic idea derived of an 18th century Science of Man into the account of an evident capacity at the origins of the positive categories of an understanding. Kant now made a new distinction; a determinate form that carries a concept into the determination of the particular, and the concept of reflection on the particular, to which a reflective judgement is ‘compelled to ascend.’ (§ 4) This is the reflective judgment seen as inseparable from the particularity of aesthetic experience of pleasure and Kant thereby gave

²⁷⁵ CPR A141/B180

²⁷⁶ Ibid B186

sensibility a new reflective role for the empirical art of schematism which related to the experience of the body. (§ 6)

The Concept of Nature and a *Technics* of Power

The *Critique of Judgement* moved away from questions of predication and logic towards reflective techniques of knowledge. This study was of the power that underlies concept production and the categories for ordering the world at the level of anthropological consciousness. It meant the empirically positive function of mediation of human experience through a critical reflection on the ‘matter of logic,’ or intuition. This ‘matter’ appeared either under the schematic of an understanding or under the symbolic mode of analogy, to which the latter gave the reflection which stood for an indirect intuition accounted for through the imagination.²⁷⁷

The mediation of imagination through feelings of pleasure and displeasure was a power which served to ground the “inner possibility” of concepts in their practical application. It followed the concerns of a Science of Man in the sense that it served a positive distinction of functional concepts from “the narrow low life of animals.” (§60) These required techniques of reflection prior to any expressions of desire as they offered the possibility of reasoned transformation of habituated moral interests. But this also looked back to an earlier conception of pleasure and displeasure for its positive source, reflection was to account for the principles ascribed only to “a feeling of life” by which Kant indicated the ‘vivacity’ in representation in its relation to a historical concept of the living. (§1)

The disposition that life took up in its purposiveness was driving the teleology which appears in the second part of *Critique of Judgement*. Kant associated the positive predispositions of our cognitive faculties with the orienting of what was conceptually apprehended of an external order. This was moving beyond the strict divide of reason and experience and served his positive ambitions for explaining an evidently conditioned nature,-

²⁷⁷ CJ (§59)

“To discover in nature an intelligible order...divide its products into genera and species through a principle of explanation and interpretation, and, out of material coming to hand in such confusion, to make a consistent context.”²⁷⁸

This is the *technic of nature* to which reflection gives the consistent context of an ‘undesigned purposiveness’ in the logical order evident behind the power of concept production (§72). Kant proposed that ‘imaginative ideas’ predicated the practical necessity of the concept, this grounded the subject’s freedom. It also meant that transcendental philosophy could look beyond a narrow understanding of schematics by adopting something beyond a conditioned necessity. It is this speculative freedom that gives the ‘root origin’ to subjective reasoning beyond its empirical nature.

What constituted this problematic source for any ideas of reason in the ‘feeling of life’ now also constituted the positive principles in the concept of subjective physical ends. Despite the fact that Kant’s teleology finds such universality compromised by what subjective necessity drew from objective reflection, (§77) he maintained that underlying possibilities for transcendental knowledge was to be discovered something to be accounted for by techniques of representation. These effects appear in the conformation of faculties. (§77) Because these relate the power of synthesis to a higher source of finality (even an ordinary cause of the world, §78), it was the causality which could only find its expression only through a positive notion or heuristic principle, that accounts for an orientation of the concept of life in the concept of nature.

Kant returned to an anthropological predisposition in understanding for such a positive notion. Paradoxically, he also attributed this to a spontaneity that thinks “different from the human.” (§77) This predisposition to difference was aligned with what *Critique of Pure Reason* gave as the possibility of attaining a pure intuition through the account for new element beyond any constituted finitude. It drew on a completely transcendental concept, no longer focussed on the nexus of intuition and understanding, but explained by the ambition to account for predicates of judgement. This was a power underlying any possible representation or discursivity.²⁷⁹ Transcendental theorising referred this problem to an anthropology through its account of

²⁷⁸ Ibid 1st Intro §5, (1978) p25

²⁷⁹ Ibid §76

vivacity as positively relating pleasures to a predisposition of our cognitive faculties; but the practical necessity of moral perspective on our “consciously vain desires” gave the ‘nature’ of this relation between pleasure and desire.²⁸⁰ From this perspective, Kant’s engagement with a Science of Man was exploring a doctrine of nature that pointed to the domain of empirical psychology. As a doctrine of nature, this converged with the particular difficulties of legitimacy, to which *CPR* demanded the apodictic certainty of a science.

Extending the Legitimate Grounds for a Doctrine of Nature

The 1785 text, *Metaphysical Foundations of Natural Science*, saw Kant follow a natural description of objective knowledge of bodies to the limit given as apodictic science. Historically, a doctrine of nature was the ontological ground of knowledge in general expanded as a natural science. When Kant extended a ‘metaphysics of bodies’ derived from Newtonian dynamical principles it was to see how far they served a modern metaphysics.²⁸¹

In *Critique of Pure Reason*, the foundational relation is given in the Transcendental Deduction: in the ‘general notes on a system of the principles’ Kant indicates the ambition to delimit schematically an objective reality given to ‘outer intuitions,’ in so far as they contain the “conditions of possibility of real relations of action and reaction, and therefore the possibility of community.”²⁸² For an empirical thought of outer intuition to be comprehensible as movement of points in space, this implicated successive existences of an inner self in different states. *Critique of Pure Reason* states that “space alone is determined as permanent, while time, and therefore everything in inner sense, is in constant flux.”²⁸³ From this assertion, Kant went on to state that, “all alteration presupposes something permanent in intuition, and through an inner sense no permanent intuition is met with.”²⁸⁴ In this way, an affirmative succession of inner sense carried the ambiguity of permanent causality into all the wider empirical sciences.

²⁸⁰ Ibid 1st Intro III, (1978)p16

²⁸¹ Preface, Kant (1970) p5

²⁸² *CPR* B293

²⁸³ Ibid B291-2 ‘Postulates of Empirical Thought’ following from the ‘Second Analogy’

²⁸⁴ Ibid B291-2 ‘Postulates of Empirical Thought’

However, *Critique of Pure Reason* also looked to objectivity as upholding the positive ambitions that followed from the categorical approach to representation. This meant the possibility of synthesis that serves the two following points;

- Firstly, it states in ‘The Refutation of Idealism’ that the positive ambition was to ground the Transcendental Aesthetic. This was the central task of giving meaning beyond what was dogmatically denied to positive content in the objective relations of subjective representations. In this sense, Kant’s Transcendental Idealism defines itself against what could be considered a sceptical approach, i.e. it does not completely exclude an empirical possibility at some level.

By denying both an absolute transcendental realism as well as an empirical idealism, Kant leaves the path open to what can be considered under the positive content of an empirical representation. The ‘Refutation of Idealism’ leaves this to the composite origin of experience which *Critique of Pure Reason* indicates in space and time, considered in terms of an intuitive composite which is open to the transcendental domain of representation. However, since this excludes the empirical position which takes time and space as simply given, or the real in-itself as an independent sensibility, Kant retained a complexity in experience itself. This had positive value as an objectivity beyond a simple empirical intuition.²⁸⁵

- Secondly, by following a science of natural description, Kant points to the determinations of outer nature as implicating the positive domain. This domain carries the ambition of true representation of the transcendental concept. It necessitates invoking a certain theoretical notions of what a positive domain could express about actual states of affairs which, in turn, implicates the principle of causality behind all positive determination of nature, since this domain extends towards a wider empirical nature.²⁸⁶

The question of such a domain was followed in *Critique of Pure Reason* through possibilities required of a perspective on the general doctrine of bodies. To this end, it was Kant’s ‘table of categories’ that gave the important theoretical approach to be followed by transcendental

²⁸⁵ ‘Refutation of Idealism’ B274. According to Kemp Smith, the importance of this passage is in the division between a subjectivist reading and a phenomenalist reading of Kant. Kemp-Smith (2003) pp298-321

²⁸⁶ Refers to the ‘Second Analogy’ B233

philosophy, this supplies the “indispensible” plan for the science which is a complete theory of knowledge. If one follows the ‘table of categories,’ one finds that it moves from a synthetic mathematics by analogically extension into a dynamic science and Kant indicates that while the former can stand as fully constitutive, the latter could only be the regulative for a wider systematic knowledge. The parallel is for the progression of any speculative science as projected into Kant’s general systematic of human understanding.²⁸⁷

By taking the legitimate ground of Newtonian dynamics as a general ‘metaphysics of bodies,’ the *Critique of Pure Reason* merely pointed to as possibilities around an expanded analogical thinking. But *Metaphysical Foundations of Natural Science* considers these by degrees of determination of the senses from a pure mathesis. This is a progression that follows from the determinable kinematics, through the dynamical aspects of a mechanics and extends to a general phenomenology of matter. This phenomenology relies increasingly for its determination through the reference to a mode of representation by the senses, and thereby depends on a power of representation generally. So the progression from the most formalised to the least formal opened increasingly to an empirical practice of concept production.²⁸⁸ On the one hand, degrees of determination relate the dynamical concept to the data of intuition, but on the other, this relation gave laws of thought as they appeared from the perspective of an empirical finitude as it chases an exhaustive determination. The important point of this schematic was to indicate that more empirical sciences, as built up through observation and experiment, appear as open to the “infinite manifold of intuitions,” and ultimately leaves their explorations in an infinite regress.²⁸⁹

What were the specific ambitions of *Metaphysical Foundations* in setting out principles of constructing concepts on this scale? Was it to give legitimate grounds to a wider schematic that related to a Science of Man with a natural scientific concept of nature at its foundation? Or did it show what was unfolded through phenomenal by degrees of empiricism under the law of reciprocity was actually a limited axiom of the real in as far as it offered sufficiency? By sufficiency, Kant meant to distinguish his thinking from Leibnizian system which had a

²⁸⁷ CPR B109-B111 The ‘Table of Categories’ at B106 gives wider determinations of schematics in relation to discursive possibilities, namely the “possibility of community” in thinking.

²⁸⁸ Kant (1970) p14 (AK 469-477)

²⁸⁹ Ibid p10 (AK 473)

presupposed notion of pre-established harmonies to accounting for principles of discursivity.²⁹⁰ This notion returned the problem of knowledge as a concern of community, and Kant emphasised this in the ‘Postulates of Empirical Thought.’ (B292ff) Here a principle of discursivity worked within the laws of space and time for which reciprocity sufficed as long as it is not taken as noumenal existence. It merely offered possible conceptual relations as they extended experience. But such knowledge always suffered from the danger of confusing of subjective experience with an objectivity.²⁹¹

The latter could not give apodictic certainty from the Newtonian perspective. This was a perspective whose legitimacy followed a principle of inertia in matter and Kant further qualified this as a passive domain. In turn, this passivity marks the distinction from speculative internalised principles which, although lacking such apodictic certainty, he attributed to concepts of life, -

“Life means the capacity of a substance to determine itself to act from an internal principle, of a finite substance to determine itself to change, and of a material substance to determine itself to motion or rest as change of its state.”²⁹²

Because such internalised principles do not conform to a Newtonian view of matter, *Metaphysical Foundations* was therefore also arguing that natural science gave natural limits of knowledge in relation to a universal doctrine of experience. This was an emphasis on limits which now appear as essentially philosophical, rather than simply empirical or mathematical. This left the positivity of experience as defining a special domain whose specificity in relation to sciences of human reason, was upheld through philosophical ambitions for a general doctrine of wisdom. This means that *Metaphysical Foundations* ultimately indicates what mathematical sciences lacked between giving metaphysical and philosophical foundations to the anthropological domain of experience. It is an asymmetry that extends to the Science of Man and all wider domains under the influence of natural history, physiology and anthropology, etc. These now necessitated a special epistemology to give the wider philosophical grounding.²⁹³

²⁹⁰ Ibid p110 (AK 547), see ‘Postulates’ CPR B292ff

²⁹¹ Ibid p119

²⁹² Ibid p105

²⁹³ CPR p548note

Distinguishing Between Physics and *Phusiologia*

The need for the new epistemology was at the limit to what *Metaphysical Foundations* and *Critique of Pure Reason* derived from the paradigm developed under an argument for universal gravitation and its law of inertia. In Book III of Newton's *Principia*, the inertial concept of matter is understood as empirical to the extent that it depends on the perceptions and actions of the senses. In *Critique of Pure Reason*, The Analogies of Experience followed this as empirical reasoning about causal relationships with an emphasis on the power of application of an understanding.²⁹⁴ In expanding Newton's conceptions on moving forces to an empirical limit, the *Metaphysical Foundations* illustrated the distinction between a natural science and a broader philosophy of nature: the regressive analysis of Newtonian principles pushed this point to a phenomenology which necessitated a physiologically grounded concept of nature accounted for by the senses.²⁹⁵

What is significant of an epistemology grounded by Newton's mathematics was that a concept of matter was externalised force and notably opposed to an idea of hylozoism, the doctrine of matter attributed to an internalised force.²⁹⁶ During this era, the expansion of new empirical sciences was opening wider conceptions of what could constitute legitimate foundations under which specific forces of matter could be apprehended by natural scientific speculation. For example, in the 1724 work by Herman Boerhaave, *Elementa Chemiae*, he described specific phenomena in particular bodies through a speculative understanding although did not assume these as universal principles. While these were not taken as *a priori*, Boerhaave and others - notably the important contemporary, the chemist and physiologist Georg Ernst Stahl - held unanimously that the Newtonian paradigm presented the ideal of experimental philosophy. The chemist Georg Stahl, often associated with the theory of the virtually weightless substance known as phlogiston, is also associated with a vitalistic system in the field of medicine. But he notably opposed the materialisms of Boerhaave and also the physician and physiologist Friedrich

²⁹⁴ CPR A176/B218ff

²⁹⁵ Kant (1993a) 22.164

²⁹⁶ See discussion in Freidman (1992) p234

Hoffmann.²⁹⁷ Following an ideal science meant discovering what new relations could be established for phenomenal thought through the disciplined method of empirical observation. This meant following the analogical model by which Newton derived the universal law of gravitation.

Kant was well grounded in the 18th century sciences and familiar with the discussions of such forces and other new ideas emerging to account for the science of specific bodies. These were being understood, not beginning with natural definitions or general theories such as the universal and generic forces of gravity, but addressed through epistemological questions becoming necessary in justifying new physiological views of the body. Kant shared this view of introducing a priori concepts as hypothetical representation of the body to account for intrinsic powers evident in living organisms.²⁹⁸ It had a significant bearing on his progressive philosophical ambitions that followed a transition between a natural scientific concept and the physician's concept of nature. This appears most developed in Kant's last unfinished work, the *Opus Postumum*, which was moving away from discussion of feelings and reflective judgements of *Critique of Judgement* and has been identified with the ambition for exploring purposiveness within the experience of the body.²⁹⁹

Extending a concept of the vegetative body through its experience of force gave a significance that emerges around what Kant considered an important estimation in understanding positive activities in other bodies. A speculative concept of vegetative body and its experiences could offer the possibility for new forms of science, -

“we experience organic forces in our own body; and we come, by means of analogy with them (with a part of their principle), to the concept of the vegetative body, leaving out the animal part of principle”³⁰⁰

²⁹⁷ Herman Boerhaave's *Elementa Chymiae* (1724) seems particularly significant as it is mentioned by Kant in *New Expositions* (1755) *Negative Magnitudes* (1763) *Dreams of a Spirit Seer* (1766), *On the First Grounds of the Distinctions of Regions in Space* (1768) This example from *Opus Postumum* (22:213) See discussion in Freidman (1992) p240ff.

²⁹⁸ Kant (1993a) p60, 21.186

²⁹⁹ Kant (1993a) p102ff. Forster (2000) p22

³⁰⁰ Kant (1993a) p118 [21.373]

The *Critique of Judgment* already conceived of the human as the highest example of a biological organism, the animal as self-moving machine with the possibilities for giving subjective ends to itself under a concept of nature,³⁰¹ *Opus Postumum* describes an experimental science of the self-moving machine as opening the possibilities to a wider experience of nature, -

“he can, and is entitled to, introduce *a priori* organic moving forces of bodies into the classification of bodies in general...although only indirectly according to an analogy with the moving force of the body as machine.”³⁰²

The context for exploring the wider possibilities for a system of thought was already mapped out by the architectonic of *Critique of Pure Reason*. Kant indicated the future science of metaphysics was divided between the ‘metaphysics of nature’ and a ‘metaphysics of morals.’³⁰³ The latter found its fullest expression in the text of 1797, while Kant’s requirement for a new epistemology beyond the infinite regress of *Metaphysical Foundations* indicates the full metaphysics of nature that never appeared.

However the Architectonic gave a sketch of what was intended of such ‘metaphysics of nature.’ Kant subdivided a general science of nature into, ontology, rational physiology, rational cosmology, rational theology; beyond this a further division of rational physiology comprised of rational physics and rational psychology.³⁰⁴ This classification was presented as a progressive program of study for the physics that would become the metaphysics of bodies in general. A natural system of thought was an ambition for his transcendental project, the phenomenology that necessitated a physiologically grounded concept of nature of the senses. It addressed two specific problems;³⁰⁵

- Firstly, the positive domain of a rational physics as the ultimate goal of a general metaphysics proper: *Metaphysical Foundations* could only give the limited formulation, falling short of the ambition of attaining a reasoned knowledge beyond the boundaries of experience with regard to all bodies.

³⁰¹ Kant (1978) p22, pt 2 §4

³⁰² Kant (1993a) p66 [21.213]

³⁰³ CPR A841/B869

³⁰⁴ Kant A846/B874

³⁰⁵ Following Euler’s theory of light and colour attributed to vibrations in the aether. Kant (1978) §14, leads to “the gap” between the foundations and the transition. see Forster (2000) p51

- Secondly, since the general metaphysics of nature was considered an “indispensable service” for giving rational sense beyond conditionality, its ambition was giving positive ‘sense and meaning’ to a future schematics that constituted a phenomenological basis for the inner sense and its time determinations. It aimed at an epistemologically basis for a complete Science of Man.³⁰⁶

The *Metaphysical Foundations* was not intended to provide such a general concept of nature, as its positive content was excluded by the relativity of the domain. However, it marked the limit for advancing through identity and difference. By diverging from simple relations of observable physical differences, it indicated the necessity in the wider philosophical program for exploring latency in a phenomenal knowledge of nature. The wider systematic investigation of nature would look to a transition grounded by new concepts of moving forces which was converging with the life sciences.

Kant wrote an appendix to Samuel Thomas Sömmering’s *Über das Organ der Seele* (1796). Sömmering was an encyclopaedic anatomist and one of the most experienced and renowned neuro-anatomists of the late eighteenth century. His description and illustrations of the brainstem gave an early classification of cranial nerves (circa 1778). These representations of structure and function was understood as hypothetical, but Sömmering was convinced that mental faculties were executed by certain brain regions which his treatise gave as localized functions of the soul within cerebrospinal fluids in close contact with presumed nerve endings within walls of ventricular cavities. This attempt at synthesising anatomy and metaphysics fuelled contemporary discussions around epistemological legitimacy. Sömmering placed the organ of the brain at the centre of a debate central to a Science of Man with far-reaching consequences for the wider discourses on man well into the 19th century. This provoked a complicated picture that was unfolding under a Science of Man which emerged around the inherent confusion between what constituted the positive and the vital concepts of life.³⁰⁷ Another example discussed by Kant in *The Conflict of the Faculties* was Christoph Wilhelm Friedrich Hufeland’s *Makrobiotik*, a contemporary work on preventive medicine that engaged with contemporary scientific thinking.

³⁰⁶ Kant (1970) 4:478

³⁰⁷ Samuel Thomas Sömmering (1755–1830) Kant’s essay on Sömmering in Kant (2007), also the note Kant (1993a) p261. Outline of Sömmering’s neuroscience see Hildebrand (2005) pp 337-342.

Hufeland took an organizing principle as the *lebenskraft*, the vitality as conception of living force which could be weakened or strengthened through external influences, This concept of life was legitimated on the basis of a theory of moral and physical health from which Hufeland advanced theories on the ethical life. Kant's commentary, however, saw him emphasise the powers of mind, as carrying the normalising judgement over a concept of the body along with its conditions of mastery.³⁰⁸

The wider experience of the system of nature was theorised in *Critique of Pure Reason* as the 'System of all Principles of Understanding.'³⁰⁹ It aimed to constitute a priori knowledge for the relations to sensibility through a system of experience under a broader physiological system – to which physics only represented a narrow relation. In *Opus Postumum*, Kant followed the 'table of judgment' with a transcendental ambition of converging the system of observations as surveyed in the new formal elements through their progression from axioms of intuition to an experience in general. This ambitious systematising of a wider domain of force alongside the contemporary interpretation of animal powers, and meant theorising from the perspective of affectivity, to the possibility of thinking phenomenally, as constituting a world-system.³¹⁰

The New Life Sciences and the *Scientia Naturae*

The kind of a world-system that Kant was discussing in the *Opus Postumum* is exemplified by Erasmus Darwin's *Zoonomia*.³¹¹ In 1796, Darwin systematised zoological phenomena into a dynamic image of empirical progression according to a non-material principle of living force considered "effective according to purpose" of explaining a world-system.³¹² This progression followed from an organic system of nature derived of observable nervous forces of general living being (excitability), to reactive forces (irritability), forces of conservation between the two, and then intergrated as a description of organisational forces in the whole.³¹³ This systematic

³⁰⁸ Christoph Wilhelm Friedrich Hufeland (1762-1836). His *Makrobiotik* is discussed by Kant in (1993b) p315. See also Foucault (2008) pp48-49

³⁰⁹ Kant A148, also *Prolegomena* §24.

³¹⁰ Kant (1993a) p106, 22:320

³¹¹ *Ibid* p108, *Zoonomia, or the Laws of Organised Life*, (1794-1796) 2 vols. London

³¹² *Ibid* p109

³¹³ Kant (1993a) pp102-105, 22:298-310

description deferred specific epistemological difficulties in the elements for a relation to representation in the whole on the basis of what accords with the apparently natural system.

Kant's ambition was also in justifying rational experience in general as possible experiences of a system of nature beyond the division between the Transcendental Aesthetic and the Transcendental Analytic. This is despite the natural division between the logical aspect, (the elements of a science of relations) and appearance of organisation qualities of sensible 'matter' (experienced as the distributed system of nature). While only the former sufficed under Newtonian principles, the latter appears in the progressive apprehension of a domain of experience, phenomenally apprehended and thought of as positive for purposes of producing a positive representation.³¹⁴

Kant's stance in the Transcendental Dialectic emphasises negative principles purposefully avoiding the naturally given (*ontologia*).³¹⁵ However, in the Architectonic, he also treats a physiology of pure reason as a 'nature' in the sense of being principles subjectively given as elements of a logical system of concepts, in as far as they accord with empirical representations, - "although only *rationalis*."³¹⁶ In this way, the composite of experience aims to indicate the sum of objectivity addressed as the 'matter' of experience in its aesthesis.³¹⁷ The Critique measures affective experience against the constituted mathematical knowledge demanded of the Newtonian concept, but *Opus Postumum* returns to seeing objectivity in terms of the aesthetic capacity for the given. This serves Kant's philosophical ambitions in its positive reasoning.

Opus Postumum takes this capacity as derived from an aesthesis prior to an analytic and is hypothetically justified by Kant's ideal account of how the animal-machine can distinguish passively through organic sensitivities, its experience of force.³¹⁸ The *a priori* determination of such a capacity gives the determinative mode of thinking which accounts for an underlying empirical experience of objectivity in moving forces. Kant's wider ambitions for a *scientia*

³¹⁴ Ibid p137, 22:490

³¹⁵ CPR A583/B610

³¹⁶ Ibid A845/B873

³¹⁷ Kant (1993a) p145 [22:501]

³¹⁸ The Ether Proofs Kant (1993) p81, 21:550, p103, 22:300

natura was to envelope both objects of inner and outer sense as necessitated by the phenomenological representation of the system of sensations. This posits the domain that could be considered as a ‘natural’ system that must accord with demonstrable concepts experienced *a priori* and is a problem of defining the concept of a logical system, which could sustain the experience of living being.³¹⁹

It is important that *Opus Postumum* takes this capacity as theoretically apprehending empirical sensibility by following the principles that science embodied historically as a philosophical problem. Kant defined how to conceptualise the “primitively moving material,” through a systematisation of individual cases.³²⁰ The parallel would be in the physician judging the effectiveness of his action through a living body’s reactions to pleasure and pain.³²¹ This historical emphasis brings out the progressive difficulty of understanding how general laws operate in particular concrete situations, and whose historical context was of constituting this a positive science. As a historical problem of knowledge, this is evident in what Plato praised in Hippocrates, and informs the concept that notably finds a universal extension in *Timaeus* as the picture of an ideal living being.³²² But further progress of the general notion of this composite of vital function was advanced on the level of organised sensation, and correlates to what Aristotle understands as a ‘capacity’ to respond with proportion accorded to an internal disposition.³²³ This is the capacity to constitute the dynamic response implicit of an ‘affective soul’ which, in Aristotle, finds its application extended to ethics and politics.

Opus Postumum unfolded a series of ether proofs to give the determination that extends the theoretical approach towards a concept of “hypostasised space itself.” It identifies a material posited as *caloric*. While the demand for physical proof could be argued over, Kant’s focus was only on the hypothetical position in that it could be related to pure intuitions of time and space; these were understood to lack actuality but given the philosophical status of a virtual ground.³²⁴

³¹⁹ Ibid p134, 22:478

³²⁰ Ibid p137, 22:481

³²¹ General account in Tracy (1969)

³²² *Phaedrus* 270 B-D and *Timaeus*, where the soul of the cosmos, seen as circles of the same and the different, gives the body as likewise formed of opposites blended under a power of a universal principle.

³²³ esp. *De Anima* 434a30-60; *Parva Nat* 436b19-437a2

³²⁴ Ibid p62, 21:206

Since any sensory experience finds its legitimacy only through intuitive correspondences, this historically related to the position that no experience of force is possible in a void, and any given possible experience requires *a priori* sensation of something.³²⁵

It remained an open question what ultimately grounded such an empirical ‘fact’ embedded in the intuitive manifold. But Kant’s intuitive manifold was by definition a self-unifying capacity given to the objective account of organic space. It was also a unity in the conditions of possibility which was axiomatic for Kant. In this way, this intuitive capacity ultimately gives the unity to outer experience in general.³²⁶ *Opus Postumum* takes this axiomatic as the problem of knowledge that necessitates the virtual material mediating a capacity for deduction of any categorically given. As with the historical problem of knowledge, it looks to the systematic relation with contemporary physiological discourses.³²⁷ But Kant’s aim was not psycho-physical parallelism, nor simple mechanical proof, but a mediate framing of wider possibility in the problem left of *Critique of Pure Reason*. This problem was characterised as the “unity of consciousness of the manifold, successively intuited, and reproduced in representation.”³²⁸ In this was the virtual material gives certain possibilities for a transition to fulfilling Kant’s positive ambitions for a transcendental philosophy.

The Root Concept and its Transcendental Reflection

The *Critique of Pure Reason* is split between empirical and transcendental forms of consciousness which defines its problem of inner possibilities; but the empirical ‘fact’ is that objects of experience represent succession through a ‘peculiar unity’ intuited as objective totality. Taken as an objectivity accorded an *a priori* capacity, this lends the empirical horizon its possibilities to be transcendently constituted.

³²⁵ The world-form thinkable only on the basis of sensible qualities or the historical ‘plena’ was the pivotal element that Galileo sought to mathematise and hence initiate a modern conception of science. See Husserl’s account in Husserl (1970) pp34-41.

³²⁶ Kant (1993a) p70, [21:221]

³²⁷ Illustrated by Kant’s reflections in a letter to Sömmering. Kant (1999) p501

³²⁸ Ibid p86, [22:552], *CPR* A103,

The ‘Selbstsetzungslehre’ of *Opus Postumum* sees this as the synthetic capacity that follows the progression expanding the modal functions of the concept. Through an intuition of a fundamental material, as the inherent unity of the given, this opens the power of representation to be mediated through an analytic proposition. But intuition is also a power of synthesis prior unfolding the concept. This, says Kant, is something that no sceptic can take issue with, since this is not a debate about space or time as such, but is derived from something against which the manifold takes its determining position.³²⁹

The *Critique of Pure Reason* relates that such pure concepts of understanding are enabled by the categories which define the objectivity of possible experiences.³³⁰ In the Transcendental Doctrine of Judgement, these are the positive categories that give valid relations to objectivity as such, while equally their origins are grounded in the subjective aspects of experience.³³¹ Because the subjective aspect of experience gives unity to the stems of sensibility and understanding, its positive categories determine the root concept whose legitimacy comes from what a subject apprehends as its ‘real’ relations.³³²

The *Opus Postumum* understands that there is only one space and time. But this is no longer formally given, rather it is given by a sensible progression that follows from an affectivity in the manifold of intuition. It necessitates something subjectively posited as temporal notions of an unconditional unity of space and time, which transcendental philosophy takes as the concept to be progressively grasped.-³³³

“space is a quantum, which must always be represented as part of a greater quantum – hence infinite, and given as such. Progress in this quantum is not to be regarded as given; the progression, however, is.”³³⁴

The concept of the quantum becoming determinable through principles of a composition (axioms, anticipations, etc) is the logical function that Kant is developing on the basis of the

³²⁹ Ibid p170-172 [22:11]

³³⁰ *CPR* A111, ‘Transcendental Deduction’

³³¹ Ibid A124, See Heidegger (1997) p272

³³² Ibid B197

³³³ Kant (1993a) p171-172 22:28-29

³³⁴ Ibid p170 [22:12]

existence of an ultimate reality which he defers to “certain laws.”³³⁵ In *Critique of Pure Reason* this transcendental concept was held with respect to what an inner faculty related to a noumenal world and ascribed through relations to be discovered through a “marvellous faculty which the moral law first reveals to me.”³³⁶ Here the emphasis was on the subject ‘possessed of freedom.’ The Critiques embodied the positive power of intellectual principles as the capacity to conform to the negative laws of nature; but the *Opus Postumum* took the root concept as retaining a determinable aspect, through its capacity to synthesise possible domains for the theoretical world. This followed from the power to represent space and time objectively and, according to Kant, requires a concept of experience as “infinitely positive,” and “not merely a thinkable whole.”³³⁷ Because this thinkable whole derives from the totality experienced, the objectively given remains the secondary act of empirical determination, which accords with the a priori positive categories (quantity/quality, etc) - *Opus Postumum* left a further difficulty as to the nature of such a root concept, since it appears posited in the domain with “thoroughgoing relation of means to ends,” which is ascribed within the very possibilities of outer experiences.³³⁸

This shows how Kant was distinguishing a logical domain of possible predicates under the *concepti subjecti*. The wider doctrine of *scientia natura* necessitated the transcendental perspective on a domain for inner relations to experience in general. But while *Critique of Judgement* limited this to symbolic content under a capacity of purposiveness, *Opus Postumum* held the thinkable totality as drawn from a *sum* of possibilities experienced. A purely theoretical concept could be posited and this leads to the question of what theoretical foundations Kant was drawing on?

Opus Postumum offers repeated references to the various organic theories looking to encompass inner experience of symptoms and desires as well as what is evident externally as purposiveness in forces of the phenomenal world.³³⁹ These are a parallel to the *sum* of possibilities that Kant

³³⁵ *CPR*'s Transcendental Deduction B130 and *CPR*'s ‘General Note on the Transition from a Rational Psychology to a Cosmology’ B429.

³³⁶ *Ibid* B430-1, B432

³³⁷ ‘Selbstsetzungslehre’ Kant (1993a) p184.

³³⁸ *Ibid* p186, 22:77-78

³³⁹ *Ibid* p197, 22:100

proposes to distinguish by following two modes of what the concept of nature could hope to apprehend;-

- Firstly, the concept being attributed to the phenomenal forces evident in the study of animal instincts and self-preservation,
- Secondly, the concept of totality of a domain of possible experience by animal and vegetable life.³⁴⁰

The thought of such concepts precedes the possibility of any categorical thinking of life's activity. The parallel is with the origins posited of categorical intuition and its unity understood a prior legitimate grounds. From this theoretical unity, the *Opus Postumum* can state that an intuition must follow the twin aspects of a production; a transcendental systematic of symbolic connections following positive analogies of experience, and a temporal systematisation which is empirically derived from a progressive or cumulative aspect of a world-experience.

The *Opus Postumum* therefore addresses both the possibilities derived of reflective judgment as well as the perspective that moves from this empirical capacity towards a transcendental perspective on a world-experience. By extending the concept of world-system, formed of the sum of different modes of lived experience, a transcendental perspective describes “a third element...the foundation of appearances as if established in immovable solid ground. A justified possession.” But this ‘justified possession’ is a positive domain which *Opus Postumum* follows progressively from its metaphysical function towards its possibilities for a transcendental philosophy. Conversely it is also constitutive of the concept through which the subject binds itself *a priori* to an objective horizon.³⁴¹

Technical Concepts and Moral Power

Michel Foucault identified the *Opus Postumum* as exploring a function by which man defined his concrete world through degrees of the “changing powers of sensation.”³⁴² Such a function determines the possible ways in which a subject appeared to itself as an object among objects but

³⁴⁰ Ibid p186-7, 22:78. Kant is thinking of *anima-mundi* attributed to Schelling p254, 21:97 see also Forster (2000) p109

³⁴¹ Ibid p194-5, 22:96

³⁴² Foucault (2008) p79note

which also required the originary concept grounding representational identity in the self, along with extending the possible transcendental freedoms. The earlier contention was that Foucault saw this as lending the historical perspective that served the representing subject by extending its future possibilities for transcendence; the significance of *Opus Postumum* was seen as this transition from the historical problem of a rational physics, to the transcendental problem necessitated of constituting a grounded subjectivity.

In this respect, the parallel is with what the Transcendental Dialectic worked through as given to the subject as “the mere idea,” namely as predicates that need to be conditioned.³⁴³ Against the idea, Kant’s polemical places emphasis on our present mode of knowledge: he took the sceptical position held in relation to the source within ourselves which followed the scholastic maxim of unity, as the fundamental property to which any logical principles are subordinated. The logical modes of a transcendental principle are a “mere idea” that has been at “all times eagerly sought.”³⁴⁴ The *Critique of Pure Reason* therefore looked to modern science as a disciplinary practice in which a concept of nature, delimited under identity and difference, could be legislative for certain regions of knowledge and from which the concept that gave a true representational function in general should proceed.

The problematic relation, with respect to a Science of Man, appears since the transcendental notion of ‘true function’ was excluded from reason within itself. This left the question of legitimacy as a principle of function, which was neither strictly logical nor hypothetical, but as what appeared to experience itself as the legitimate claim to a reality. What appears through the ‘manifold of effects,’ as the self-grounding maxims of reason and as an empirical concept, already functions to give the possible experience of difference in nature. *Critique of Pure Reason* emphasised subordinating these experiences to logical concepts, as a regulatory function, since empirical concepts have a fundamental lack from the transcendental perspective.³⁴⁵ The necessity

³⁴³ CPR A645/B673, A642/B670.

³⁴⁴ Ibid A651/B680

³⁴⁵ Ibid A660/B688

for the analogue was as an orientating rule or principle, ultimately serving to give empirical reality the “harmony” with itself.³⁴⁶

The ambiguity arises in *Critique of Pure Reason* because Kant also takes reason in-itself as a metaphysical faculty for analysing concepts of experience while empirical concepts are also synthetic and constitutive expressions of experience. This is attributed to a positive source “beyond the limits of experience.”³⁴⁷ It is because these are beyond limits that transcendental reason takes its practical function from the power of knowledge as necessary for achieving practical ends. On the other hand, this also attributes to an empirical function of the will, the power of co-ordinating sensuous experience against which the transcendental reason implements a necessary prudence with respect to natural law. This serves a purpose of maintaining its own freedom.³⁴⁸ Ultimately this is a concept of freedom that allows Kant to extend ethical laws of conduct to the world. But this is the moral ‘equipment’ enabled by the desire for freedom to accord with its transcendental concept, and was pursued as synthetic reason. It is the transcendental concept that serves the necessary synthesis of empirical concepts from a practical perspective on how the understanding ‘ought’ to function. This therefore that gave the difficulty of the transcendental concept since it was bound up with the very “ground or consequence” of subjective conditions in the practical sphere.³⁴⁹

This leaves the moral ‘paradox’ of animal reason for Critical thought.³⁵⁰ How such a transcendental function could inform rules of conduct as extended to an empirical world was the moral problem that Kant explored in *Critique of Practical Reason* through its relation to the historical concept of the *summum bonum*. But this equivocated between a ‘concept of the good’ and the concept of well-being as the intrinsic conflict of the sensible world. When the parallel appears in the symbolic modes of understanding in *Critique of Judgement*, the transcendental perspective is removed from any immediate experience, in order to account for its directing

³⁴⁶ Ibid A665/B693

³⁴⁷ Ibid A795/B823

³⁴⁸ Ibid A800/B828

³⁴⁹ Ibid A802/B830

³⁵⁰ Kant (1997b) 5:62-3

towards particular ends.³⁵¹ Likewise, *Religion Within the Limits of Reason Alone* gave the subjective ground as objective only through a predisposition of reforming man's sensuous nature: this account of man's propensity behind any symbolic representation to positive doctrines served only "in *potential*."³⁵² The moral philosophy derived from this its unique principle, "so far as this disposition displays a vitality in actions," which was the theoretical notion premised on harmony within the concept of the world's highest good.³⁵³

The ambitions of *Opus Postumum* are justified under the domain of a *scientia natura*. This now differentiates the transcendental concept as derived from a technical-practical capacity given through a theoretical approach to a transcendental schema. By following the synthetic principles for the production of concepts, Kant was looking to express an objective capacity for world-being as the concept that follows from the phenomenological progression that converges on a moral-practical domain with its concept of freedom.³⁵⁴ *Opus Postumum* therefore diverged from what the Critiques maintained as opposed powers of nature and freedom. It follows a transition from an empirical capacity for the concept, to the transcendental perspective, which starts from the speculative ambition to apprehend conceptual determinations in causal conditions. The parallel is with the maxims of conduct which are discursively held *a priori* to sensuous intuitions for the practical reason to which moral thought upheld a concept of freedom.³⁵⁵

In *Opus Postumum*, the world-concept is theoretically extended through both perceiving and thinking the grounds of experience. The transcendental ambition for the perspective from which a concept of freedom could distinguish itself from the divisions of the negative, follows from the presupposed unified world. In this sense, transcendental reason constitutes an equivalent of what the will synthesises from "real opposition."³⁵⁶ Although in Critique, the transcendental perspective was given to individuals as "a mere idea," an objective freedom is expressed in *Opus Postumum*

³⁵¹ Kant (1978) §59 This reflects one of Kant's central struggles against the pantheistic debate. See also 'What is Orientation in Thinking?' Kant (1990) p235.

³⁵² Kant (1960b) p35n, p57, p145

³⁵³ Ibid p159-160

³⁵⁴ 'Practical self positing and the idea of God' Kant (1993a) p200-203, 22:115-119, p204-205, 22: 123.

³⁵⁵ 'What is Transcendental Philosophy' Ibid p230, 21:26, p216, 22:59 Kant is making his point against the Spinozist debate between Friedrich Jacobi and Moses Mendelssohn, p216, 22:59. See also Förster (2000) p217.

³⁵⁶ Ibid p229, 21:22

as a technical capacity to apprehend the world. It is the extension to the moral-practical reasoning which Kant's positive ambitions open to the transcendental philosophy in relation to empirical experience of the transcendental system as it encloses a domain of synthetic knowledge.

The synthetic knowledge constitutes the transcendental concept through a domain that follows from practical aspects of the self-steering subject. A phenomenal will acts through its moral/technical systematic which carries "the noumenal point of view" as it appears prior to acts of consciousness.³⁵⁷ By making the world objective through the *copula* or link between a universal idea and its concept of world, the concept is given to experience through the axiomatic principle by which consciousness extends its natural capacity for constituting the system of ideas. It therefore presents a constitutive picture of organic being as it draws on the super-sensible idea, theoretically upheld – only as long as it accords with its own synthesis of the architectonic of the world.

In theorising the organisms 'virtual' primary activities, Kant gives the technical-practical imperatives of a drive which is parallel to a transcendental principle by which the concept can conform to demonstrable experiences of the world.³⁵⁸ The practical concept appears as an organism's higher perspective on the reality of its *natura bruta*, but Kant's real motivation here was to determine whether "another will is thinkable in place of this one." This is the transcendental theme that draws on an ethical perspective evident with his demand for the "ideal archetype of man adequate to duty."³⁵⁹ In looking to such an inner capacity, as the theoretical constitutive for a transcendental systematic of ideas, the transcendental function means a synthetic capacity for constituting the moral concept. A transcendental systematic of nature now becomes the perspective from which the concept imposes on man his empirical world of experience, but whose inner capacity gives transcendental possibilities in constituting the

³⁵⁷ 'Transcendental Philosophies Highest Standpoint, God, the World and the Thinking Being in the World' Ibid p235, 21:32

³⁵⁸ Ibid p218-219, 21:11. Kant distances himself from the Spinozists who are "swärmerische." God is therefore to be distinguished from a world-soul. p225, 21:19

³⁵⁹ Ibid p239-240, 21:37

positive concept of the world. Here was the theoretical perspective which Foucault took as informing the anthropological research into what man actually produces out of himself.³⁶⁰

The World-Concept and the Science of Man

It is only by implication that Foucault related *Opus Postumum* to *Anthropology from a Pragmatic Point of View*. In terms of an 18th century debate on a Science of Man, Kant's late *Anthropology* states its ambition to be the investigation of how man pragmatically makes his world as revealed through activities of life. What is notable is that this no longer aspires to a *scientia natura* delimited under a unified logic: anthropology was seen as a difficult practice in relation to the doctrine of nature. The difficulty was the synthetic reasons behind the anthropological domain, as faculties that describe a 'self-steering' in man that an empirical survey could only tangentially approach. Kant does, however, refer to anthropology's ideal archetype, as framed as the citizen of the world, and commentators have related this to what Kant was redefining through his anthropology lectures during 1780-1790.³⁶¹ These became increasingly concerned with social and cultural, political and historical elements, as the empirically productive aspects of a "second nature." It was this that displaced notions of natural 'psychology' which gave a Science of Man its earlier orientation from the beginning of the 18th century.³⁶²

In this respect, *Anthropology* opens with a Didactic which describes an extended field of possible practices encroaching on a traditional 'concept of the good.' It is a survey of possible dispositions and drives for a moral law in as far as they are legitimated by observations in an empirical world.³⁶³ Such practices are no longer specified in relation to the negative conditioning of freedom and nature as *Critique of Judgement* where aesthetic play was through an equivocal 'liveliness.' Rather *Anthropology* takes as 'pragmatic' what it observes as the empirical

³⁶⁰ Foucault (2008) p44, Kant (1993a) esp p253-254, 21:91-21:94

³⁶¹ CPR Bxxxii Reinhardt Brandt sees this as dependant on a Leibnizian optimism. Brandt in Jacobs (2003) p90, p96

³⁶² Many commentators have described this, notably Foucault (2008) pp108-124, Jacobs in Jacobs (2003) p111

³⁶³ observation of interior forces and discussions of mental health. *Anthropology* §4ff popular psychology from §7ff, whose comparison converges around §45-59 on the qualities and ailments of the soul.

perspective on the phenomenal and necessarily synthetic interpretation of its world.³⁶⁴ The sum of synthetic interpretations constitutes *Anthropology's* second part, a Characterisation, which is a typology categorising sensible beings as they accord to an activity under the cosmopolitan law.

Since this empirical domain is limited to the pragmatic perspective, any citizens of this world are given only through this concept of the world. This concept is a measure, distinct from the polemical rational physics, but also from the wider terms of a rational physiology, so important for *Opus Postumum*. Like a historical *scientia*, this concept will now ground what extends both to physics and psychology as an idea of natural reason. However, as a relation between the corporeal nature and thinking nature this is now self-contained under principles a priori of the knowledge of the world.³⁶⁵

Kant's task was giving an inner perspective on what he "can or should" make of himself, as the object of this world that characterises the rational elements of man.³⁶⁶ But this leaves a cosmopolitan perspective to be derived only from the distribution of anthropological types as what actually constitutes this domain. It downplays the strict division of Critique precisely because of the difficulties of inner sense and the problems associated with an empirical psychology in its legitimacy as distinct reason. This was the problematic domain that *Critique of Pure Reason* sought to "banished from the domain of metaphysics" on the grounds that it is excluded by the very idea of science. This is what reappears, after a fashion, as an anthropological domain behind the survey of a fragmented reason, as the evident nature of the empirical world.³⁶⁷

What does the anthropological domain show? Kant had dislodged any empirical perspective on rational metaphysics through finitude in knowledge. Equally he characterised as a transcendental problem what was made evident in the need for practical principles in the world. In this sense, anthropology returns to an admixture of desire and prudence for the exploration of negotiating

³⁶⁴ Paul Guyer relates this to what *CJ* gives as a vision of nature as a domain that realises its own laws. Guyer in Jacobs (2003) p137, p150

³⁶⁵ Ibid p248-251

³⁶⁶ Kant (1974) p3-4

³⁶⁷ *CPR* A849/B877

natural impulses which were historically associated with ethical techniques following transcendental goals.³⁶⁸ Observations in this domain inform of how citizens in the world relates their powers of representation to modes of empirical sensibility: this power characterises a mind's ways of thinking in relation to the knowledge derived from the empirical counterpart, the modes of perception of the world. Such a binary gives a different perspective from the dualism between nature and freedom. It makes apparent a substitution for the concept of freedom when there are only practical principles to attribute to an inner sense.³⁶⁹ Against the problematic relation between the intuition and its understanding, the anthropological domain makes intelligible events that "embarrasses understanding" - *Anthropology's* didactic finds that sensibility and common sense introduces a *sensus communis* as a productive judgement "not formally brought to the tribunal [but are rather] proceeding directly from inner sense."³⁷⁰ The anthropological concept of world makes this intelligible through necessitating a concept of man's anthropological existence which is neither the concept of good nor a concept of nature.

What Kant observes as the constitutive qualities of a cognitive theory, elsewhere associated with a sensibility, is now an empirical fact. It is also a capacity for the world-system of man justified "because he is his own ultimate purpose."³⁷¹ The transcendental perspective of the *Opus Postumum* described this 'world concept' as the *sensu cosmic*, the knowledge giving unity of the ends of reason. *Critique of Pure Reason* drew on a scholastic concept of unity for this knowledge.³⁷² But the world-concept which is differentiated in the later *Logic* notes (Jäsche) is the system of reasoning which now appears under an anthropological domain. This is the world-concept distinguishes itself from a cosmic concept, since any systematic unity is sustained only under an empirically common world.³⁷³

³⁶⁸ Kant (1998) p416n

³⁶⁹ Kant (1974)p203

³⁷⁰ Ibid p24 (§7), p30 (§10)

³⁷¹ Ibid intro

³⁷² *CPR* B867

³⁷³ Kant *Logic* introduction "The concept of Philosophy in General/Philosophy according to the School Concept and the World Concept/Essential Requirements for the Goals of Philosophising/The most General and Highest Tasks of the Science" p25

In the *Logic*, Kant framed the task for philosophy itself through the idea that it can show this as an ultimate end. On the one hand, the world-concept stood for the “highest maxim of the use of reason” which unifies his cosmopolitan philosophy, but the *Logic* limits this through the question of man. This is the question of man that points to *Anthropology* and the binary of being/thinking whose domain put the pragmatic maxim in place of transcendental reflection. It is constituted from an ‘unthought’ hybrid in the world-concept.³⁷⁴ Because this is inherently problematic for any pure discipline, Kant’s empirical research into what man makes of himself leaves this as the perspective on man’s self-knowledge which is parallel to his capacity for world-being.

Although it was only by implication that *Anthropology* points to the discussion of world-being from the systematic perspective of *Opus Postumum*, this text describes the world-concept as the complex of sensible beings “insofar as they are at least conscious of themselves” and constitute a people acting, making, producing over time and giving rights and duties to each other.³⁷⁵ But the significant difference in *Opus Postumum*’s world is that it extends the source of ideas to a determination of the totality. In the heterogeneous domain of *Anthropology* this capacity is reversed, as what the person only ‘by rights’ ought to become conscious of in the whole. This delimits the subjective ground as a productive domain for the objective world, a domain of world-beings whose empirical ground cannot fully be extended beyond a description of an anthropology existence.

An empirical understanding is limited to a systematic of rules that converge on an admixture of habituated activities. Precisely such uncertainty within all conscious activities gives the problem to which all positive solutions are ultimately ‘pragmatic.’ When Kant balances this uncertainty with the philosophical task, accounted for by “intentionality,” it serves to sustain when apparent nature “refuses to help a freewill.”³⁷⁶ *Anthropology* is only an evaluation of human activities contained under the concept of purposes within themselves, and evidence of these diverse modes of empirical understanding which become differentiated into moral and technical logics within a world-system. A systematic task therefore draws on the wider conflict within positive knowledge

³⁷⁴ Foucault’s phrase (2008) p107

³⁷⁵ Kant (1993) p211, 22:51

³⁷⁶ Kant (1978) p237ff ‘On the character of the species’

as an individual activity, and differentiates a philosophical task under such empirical conditions. Where *Anthropology* converges on the world dominated by history and culture, the transcendental problems of the rational animal becomes characterised by the ‘capability of reason.’ Elemental repetitions in a transcendental history show themselves only through self-awareness of its situation at the phenomenal level, while the pragmatic perspective means that such phenomenal existence draws on a world-concept, whose progressive organisation indicates Kant’s cosmopolitical world.³⁷⁷

Anthropology can only implicate such processes in the appearance of a ‘mere idea.’ The transformation of human nature by social and historical forces is equally equivocal. Kant’s position is that, -

“nature has planted in the species the seeds of discord, and that nature has willed that the human species, through its reason, to turn discord into concord, or at least create a constant approximation of it.”³⁷⁸

The world-concept cannot therefore be a transcendental given, but a concept within which the possible world is a domain under the evaluation of a reason. Both technical and moral reasons compete in this admixture, challenging any transcendental illusions through empirical necessity. The importance of the world-concept is in offering the challenge to any transcendently given concepts. In this domain, despite the fact that man “errs,” Kant identifies a productive play between multiple understandings and the act of exchange which draws on the moral/technical admixture. But these are “neither natural nor artificial” but something we become forced to accept as real.³⁷⁹

Precisely what legitimates this concept as reciprocated under this illusion becomes the question of how man acquires his world from values freely communicated in a formal exchange.³⁸⁰ The order of the world is paradoxical, seemingly lacking in reason. *Anthropology* ascribes temperament to such inner values beyond any apparent nature of man, which it supports only through a ‘Characterisation’ of how the will accords its prudence to the faculty of desire as ‘ways

³⁷⁷ Ibid p251

³⁷⁸ Ibid p238

³⁷⁹ Ibid §11, (p31), §13 (p35)

³⁸⁰ Ibid §7 remark, p25-7

of thinking' its ends.³⁸¹ While this lacks a philosophical perspective, it does differentiate moral and technical reasons that cannot fully know their world, as values characterising man's modes being which offers Kant the means to judge a 'strength of soul.'³⁸² Such strength is the power which gives man his place in the system of world and the purposiveness of character taken that indicates the modes of rational being. In the coalition of a cosmopolitan society, the domain of synthesising activity under the world system conditions the succession of human activities through the cohesive entity established under the world-concept. But as a natural disposition, this can only be presupposed according to a principle of the future.³⁸³

From the perspective of the earlier ambitions for a Science of Man which a systematic philosophy developed as an 'indispensible service,' it now departs from the demands of a Transcendental Methodology where a philosophical task was of producing transcendental coherence. *Anthropology* leaves this as a tension in this natural relation between corporeal existence and a thinking nature as activity of the world. But it is conceived of as a necessarily positive form of what the critical form could only express negatively – which is necessary because the pre-critical form, an analytic of finitude, initiated the dissolution of unified ambitions in an Enlightenment Science of Man.

Conclusion

This chapter has given an account of Kant's engagement with a contemporary Science of Man from the 1760's. Firstly, it explained why a critical front was developed against extending aesthetic criteria within a domain of rigorous enquiry. Secondly, this defined the transcendental ambitions for a Science of Man as the conditions of a general metaphysics. This chapter then showed how such a question of inner sense was being systematically laid out by the *Opus Postumum* as theoretical possibilities for a logical system of concepts. The implication was that *Anthropology* gave this the measure of the world. It world concept offered a perspective on a

³⁸¹ Ibid §89 p194-203

³⁸² A power to acquire a "kind of rebirth" Ibid p206. *Religion* also relates "a kind of moral rebirth" Kant (1960) p43

³⁸³ Ibid p238. Here equated with the concept of the good since "evil is excluded *a priori* as any lasting internal principle." p243-246.

unified moral and theoretical world as the logic of man, but had its parallel in the epistemological problems that were emerging through the natural sciences.

But Kant's cosmopolitan ideal of the citizen of the world was the engagement with social, political and historical elements evident in *Anthropology*. It highlighted conflicting moral and theoretical aspects of the world which this concept expressed. Rather than a universal concept, this suggests that Kant's later ambitions for a Science of Man looked to the formal exchange of values to justify an idea of reason, as a world-concept whose modes of rational being were now brought into play historically, and to be judged by a 'principle of the future.' This related to Foucault's perspective on ideological thinking and the medical Positivism as pre-critical practices informing political theories in the era of the French revolution which is the subject of the next chapter.

Chapter 3: The Science of Man and the Medical Revolution

Introduction

In the last chapter, Kant's categorical thinking was associated with the epistemological debates at the Berlin academy after 1740. This chapter will focus on the Science of Man developed in 18th century France as a general science characterised by the ambition to unify individual sciences under new considerations of the human species in an emerging relation to the study of nature. Inspired by wider Enlightenment themes, the Science of Man will now be associated with the reform of French medicine and the explicit task behind a transformation in the medical sciences. The renowned animal and human anatomist and physician Felix Vicq d'Azyr has been credited with motivating medical reforms by broadening the scope of their investigations to include environmental factors, such as meteorology, water quality, public sanitation. But medical theory also represented a 'certain method' from which a proper pedagogical method would naturally follow which was attractive to the politically minded physicians in Paris.

During the late 18th century, a progressive anatomical practice presented a challenge to the historical role of physiology in medicine. Physiology determined relations of man and his world, and a physiological debate struggled between mechanistic and spiritualistic ideas. However, both approaches shared the Cartesian ambition of overcoming Scholastic and Galenic notions embedded in medical history. In French medical circles an expanded knowledge of man was developed through a neo-Hippocratic dynamism. Equally successful for revolutionary era sciences was Condillac's *Logic* seen as the positive approach to approximating the threshold of sensible origins for a possible 'naturalism.' This semiotic practice aimed at formalising experience but Condillac's sign was also understood as an intellectual tool for an individual to mark discourse with the strength of memory and power of imagination. Condillac's *Logic* will be shown to have historic links to earlier debates at the Berlin Academy and the chapter will make this the starting point before exploring how this influenced the medical disciplines in overcoming a historical physiology and inform a revolutionary era Science of Man.

Condillac's semiotic stood as a post-Cartesian practice that could serve the medical discipline in evaluating a physiological vitalism understood as the activity of life that accorded to a concept of norms. The Ideologist Jean Pierre Cabanis saw this as the new frontier for a Science of Man and for interpretation of relations of the physical and moral. But the specific medical problem of the era was how a progressively localising anatomy could inform the new rational physiology. Here it is Xavier Bichat who represents a physiology that delimits relations between anatomical practice and the medical discipline through attributing vital properties to a taxonomy of tissues. Vital properties and the Hippocratic dynamism gave the twin perspectives to which Condillac's sign was used to evaluate a new rational physiology serving a knowledge of life.

The chapter shows how this knowledge pictured habituated bodily actions under the fluctuations of vital powers and delimited such a concept of life through physical powers that 'preside over exterior bodies.' Bichat exemplified the relation between investigating anatomist and synthesizing physiologist for his era, and also embodied a progressive idea that modern society could 'call forth' certain new functions as a result of the 'state of civilisation.' This shows what a rational physiology meant for an ambition for a Science of Man. Bichat gave a general concept of life an image of a constant struggle for a mean. In the revolutionary era, physiology was delimiting such a concept with a significance that relates to early French Positivism which is explored in the next chapter.

Condillac and the Idea-Sign

In late 18th century France, the progressive thinker Etienne Bonnot de Condillac's *Logic* stood as a hugely successful method for producing an analytic theory of signs. As a tool of ideas this had little value to a narrow physics, however it lent itself readily to what was pursued under a Science of Man. Condillac died in 1780, the year his *Logic* was published, but this text had a legacy of particular importance for the years of the Directoire (1795-1799). When the revolutionary government established the Ecole Normale in 1795, Condillac's *Logic* was widely distributed and extensively influential despite diffuse interpretations.³⁸⁴ Even beyond the

³⁸⁴ Condillac *La logique/Logic* translation and introduction by W.R. Albury.

immediate Ideologue circles of Destutt de Tracy, Pierre Joseph Cabanis and Maine de Biran, the *Logic* influenced major works as the theoretical basis for those looking for a more positive approach through a science of sensation and these formed many precursors for the positive sciences of the 19th century.³⁸⁵

Condillac developed his Sensationalism on the basis of the source of sense data being inseparable from abstract pure thought and considered this in its capacity for transformation. While Kant followed a categorical approach, Condillac's emphasis was on the transition from a speculative 'natural' will put under a pragmatic function of reason; a 'language of action' was open to a higher understanding articulated as a new language. Its focus was on empirical values attained through 'modern' observational sciences and its ambition was overcoming the shortcomings of older analytic practices.

Condillac is often associated with a Locke-Newtonian position, fore-grounding sense data produced through fundamental operations of the mind and its system of thought. This view is notably associated with *Treatise on Sensation* which considered the perspective of the perceiving mind in its relation to various modifications to senses/organs as transforming a series of data into the richer and more differentiated forms. But this text was underpinned by affective dynamic principles, such as unease and need, notably described in *Treatise on Animals*. Broadly speaking, this lent itself to 'a natural history of the soul' reflected as a theory of the mind. But its theory of signs also gave the theoretical background which developed as the influential textbook on method in the form of a *Logic*.

A dilemma surrounds Condillac's early assertion in the 1746 *Essai sur l'Origine des Connaissances Humaines*: these signs were arbitrary, merely expressing the prejudices of the community, and were the shorthand for perceptions and a remedy for memory. This was taken to imply that using signs for a practice of analysis of perceptions had an inherent potential for

³⁸⁵ Among which were; *Treatise on Anatomy and Physiology* (1786) by Felix Vicq d'Azyr, *Elements of Chemistry* 1789 by Antoine Lavoisier, *Philosophical Nosography* (1798) by Philippe Pinel, *Physiological Researches into Life and Death* (1801) by Xavier Bichat, *Zoological Physiology* (1809) by Jean Baptiste de Lamarck. All high points of French scientific thought during the revolutionary period.

confusing the order of judgment hence disruptive of an order of ‘true’ science.³⁸⁶ This was a problem of frivolity, inherited from Locke and Leibniz, and was a central concern for the early 1746 *Essai sur l’Origine des Connaissances Humaines*. In this text, Condillac takes the conjectural origins of language to explore what could function as a logical principle,³⁸⁷ and here is a surprising parallel with an essay that he submitted in favour of the doctrine of Monads to the Berlin Academy competitions in 1747. Condillac’s submission was called *Les Monadés*,³⁸⁸ and the second part of this Berlin essay, after clearing the way of anachronistic metaphysical notions, attempted a positive monadic schema of his own. It has been noted that this stands in close comparison to the psychological forms found in various of Condillac’s other works although this is often not explicit in the later texts.³⁸⁹

The continuity between the early Monad debates and what should be attributed to Condillac’s signs is a puzzle in Condillac legacy. The relatively recent discovery of this entry to the Berlin debates seems at odds with much of his later work and would represent an anachronism for the avant-garde of Paris intellectual circles since they sought to challenge such 17th century systems with the new anti-metaphysical Newtonian approach. Here the emphasis was on the psychological or epistemological modes of explanation, but *Les Monadés* offers an image of Condillac actually working against Lockean dualism and gives a new perspective on the role of his signs. The possibility was of prelinguistic thought and the unlikely symbolic aspect in *Les Monadés* sees Condillac uphold a metaphor of Proteus, the sea-god, appearing in the many forms of an all pervading logic behind the reality of a mind whose faculties ultimately can only be reduced to sensations.³⁹⁰ Such a pan-logism behind both psychological or epistemological modes of explanation, appears to predicate appearances given to sensation as the condensation of an idea of primary material difference under forms of identity in the sign.³⁹¹ Seen from this

³⁸⁶ Maupertuis formulated his own position a response to Condillac. See Aarsleff (1982) p181ff.

³⁸⁷ Locke ‘of trifling propositions’ (*Essay* Book 4:8) and Leibniz ‘Des propositions frivoles’ (*Nouveaux Essais* Book 4:8)

³⁸⁸ This was uncovered in as late as 1980 by Professor Laurence l. Bongie: Condillac’s *Les Monadés* appears in *Studies on Voltaire and the 18th Century* Vol. 187. History of the Academy is Adolf Harnack (1900) *Geschichte der Königlich Preussischen Akademie der Wissenschaften zu Berlin* 3 see Aarsleff (1980) p200

³⁸⁹ Bongie (1980).

³⁹⁰ Condillac *Les Monadés* cf Bongie (1980) p196

³⁹¹ The claim of anachronism is by Bongie, the pan-logism term from George LeRoy’s commentary (1954) cf Bongie (1980) p94

perspective, the discussion in *Treatise on Sensation* sees the idea-sign as displacing ‘metaphysical phantoms’ of substance, infinity, space and duration while condensing all predicates into simple ideas as elements of a wider psychological reality. Here is the epistemological importance behind Condillac taking a position that sensations cannot be inherently ‘wrong.’ The legacy of discovery and invention is reducible only to process of organising our ideas and this is fundamental to his later works *The Art of Thinking* (1775), *Logic* (1780), *Language of Calculus* (1798).

The *Logic*: How Signs Function as Second Nature

This produces an analytic driven by a decomposition of successive physical orders of sensibility prior to recomposition as a psychologically simultaneous schema.³⁹² Condillac presents this as a naturalism in the sense of a practice that aims at a natural judgment in the face of practical necessity. This distinguishes itself from Kant, who holds there is ‘no conception without a concept.’³⁹³ Condillac foregrounds through sensation, a “figurative expression”³⁹⁴ whose potential is for a new relational order beyond the ‘natural’ order of need. But a dispersive tendency in sensible expressions means a higher ‘need’ counterbalances arbitrary, absurd and “strange abuses of the general idea.” The figurative regularity of bodily movement gives the ground for this need,³⁹⁵ and this regulates the analysis of sensible experiences; the *Logic* takes this repetitive value as preserved by the brain. For Condillac, the brain is, -

“continually agitated by the sense organs, responds not only to the impressions that it receives immediately, but to all the movements which this first impression must produce...going by habit from movement to movement”³⁹⁶

The figurative therefore expresses the *language of action* as derived from the series of impressions of the senses: measured against the *series of ideas* this is a ‘dual source’ of impression and habituated thought. Because these are ultimately divorced from any first

³⁹² Condillac (1979) p73

³⁹³ Rockmoore (2001) p43

³⁹⁴ Condillac (1979) p95

³⁹⁵ Ibid p103, p117

³⁹⁶ Ibid p171, p175

principles, it is therefore “very imperfect,” which is why a primary concern for Condillac is in the techniques of knowledge that function against frivolous metaphysical speculation.³⁹⁷

Ultimately, the *Logic* takes the elements of its analytic as orientating the “conformation of the organs.”³⁹⁸ These impressions, along with its habits, are fused into a ‘natural order of need’. ‘Natural’ order may be ambiguous but should be understood to contrast with “all the vices of an unregulated imagination.”³⁹⁹ These produce ‘natural’ values expressed as functional signs. -

“if we have made our observations well, the use of which we make of things, confirms them right away...if they have been badly made then the same destroys them just as quickly”⁴⁰⁰

Confirmation produces habit and stands as a “second nature.” But because most people are subject to the “whims of custom” - the social reality of the *sensus communis* - to which the frivolous appears as a negativity. Therefore sensibility requires a disciplined second nature that subsumes values of good and bad habits through the differential analysis of the ‘language of action.’ The ‘language of action’ has its relation to the corporeal body with particular significance to expressing rudimentary practical principles that precede ideas; since ‘second nature’ substitutes, not for an idea of nature, but for a ‘language of action’ it indicates the productive capacity to which analysis specifically acts in the reciprocation of the impression.⁴⁰¹ Ideas internalise a problematic status encapsulated by a differential relation between the ‘language of action’ and a ‘second nature.’ The power of analysis extracts that value held of the representative sign.

The ‘language of action’ is open to a phenomenal problem which loses relevance for formal sciences, such as physics and chemistry which can be maintained through mathematical precision. As this precision does not extend to a project of a general science, Condillac’s idea-sign was developed at the threshold of the domain of ideas, the ‘unrefined languages’ whose threshold had questionable values which could appear as the deployment of arbitrary, frivolous

³⁹⁷ Ibid p185

³⁹⁸ Ibid p189

³⁹⁹ Ibid p199

⁴⁰⁰ Ibid p195

⁴⁰¹ Ibid p213-215

or negative thought. This context took the idea-sign as proposing proximity to sensible origins through the value subjected to the primary needs. Thus man becomes what he already is “purely by nature,” as affirmed in the ‘language of action:’ such naturalism put under the test of experience is paradoxically intended to exclude the frivolity of language, since it is from within instituted discourse that frivolity can proliferate.⁴⁰²

The proliferation of language diverges in two directions for Condillac; firstly, an organic coexistence given through a “co-mingling” within economies that merely risk empirical arbitrariness.⁴⁰³ Secondly, the other direction that appears intellectually as the “mania for definitions,” extending false signs as accorded with inherent values. This was what Condillac associated with the “celebrated writers” of the *Port-Royal Logic* (1662) whose epistemological legacy was both of analysis and synthesis, considered as different but equivalent methods of unfolding epiphenomenal representation.⁴⁰⁴ By contrast, Condillac’s *Logic* insists that analysis is retained both under a ‘language of action’ and for its habituation as second nature.⁴⁰⁵ The central problem therefore was frivolous synthesis at the root of unregulated recombination.

This dispersion relates back to the earlier *Essay on the Origin of Human Knowledge* (1746) and its discussion of the successive transformations of signs by which knowledge passes into understanding.⁴⁰⁶ Condillac grounds human understanding through a single principle which rests on his argument derived from the origin and progress of language. Language is an empirical but pragmatic knowledge, limited by its positive functional success over time. This is the movement that distinguishes itself from a Kantian form of rule based dialectic.

What Constitutes the ‘Well Made Language’

The later *Logic* derives from the early *Essay* this model of linear development of speech as figurative images decomposed into unitary signs. Signs reflect the ‘language of action’ both as

⁴⁰² Ibid p227

⁴⁰³ Ibid p239

⁴⁰⁴ Foucault notes that *Port-Royal Logic* primary example is the figure as a map or drawing. Foucault (1970) p64

⁴⁰⁵ Condillac *Logic* p275

⁴⁰⁶ Ibid p313

an epistemological construct and as an aesthetic figure (even an apperception); this notion of the ‘language of action’ stands *a priori* a determining will.⁴⁰⁷ By differentiating such man-made signs from an ‘animality,’ Condillac distinguishes a productive aspect of human existence under a principle which implies a higher technical capacity and constitutes the general grammar that can lend itself to a Science of Man.

The *Essay* describes the practical aspects of language as “operations of the soul;” but a natural history of signs shows it to be an ‘economy’ divided as under a tripartite division of natural, accidental or conventional.⁴⁰⁸ Conventional signs are instituted in accordance with the higher qualities of man to present ideas clearly and distinctly so as to be extended to a judgment.⁴⁰⁹ The conventional sign has a simple repetitious function, through its power of recall reinforcing memory and its reminiscence. Here is a primary function that needs protecting from the frivolous syntheses that appear as heightened forms of an excessive imagination. The idea-sign serves a problem of balance while avoiding rigid and schematising universals such as the ‘scaffolding of principles’ that can equally conceal the way to a true discovery.⁴¹⁰

Condillac theorises that a positive language developed from the mutual ground of “cries of passion to perception” carries this implicate necessity into the sign as second nature. This can be recalled to mind at will and extends operation of the soul. Language, therefore, links differences of temperaments under a generalised second nature developed through habituated signs, it transforms relation between the mental and physical through a substitution effected under a power of recombination. However, variations in discourse, in style and the reflective ‘force’ of language gives a vivacity as power of an idea that make the signs function in practice. This is not a power of imagination but a “power over the imagination;” making signs function is therefore ambiguously attributed to an insensible link that substitutes for a formal understanding in the empirical domain of a ‘language of action.’⁴¹¹

⁴⁰⁷ See Derrida (1980) p17-18

⁴⁰⁸ Condillac (2001) ptII §4

⁴⁰⁹ Ibid I §13

⁴¹⁰ Ibid pt I§25. The latter point is made of Christian Wolff ptI §65

⁴¹¹ Ibid §122

The *Essay* describes the domain of language as moving in two directions; firstly the natural drift attributed to geography, climate, the socio-political, or an anthropology. But language is also conditioned by the gifted individuals who can effectively mark language through a strength of memory and the power over imagination. The latter is the characteristic of genius; individuals both limited by language yet to whom, reciprocally, language owes a debt for its particularity,

“...being bound by rules which restrain them, their imagination strives with increased effort, thus of necessity create new expression. Indeed sudden progress of a language always occurs in the age of a great poet, philosophers carry it to perfection only much later.”⁴¹²

Here is the movement between imagination and its analysis, as polarities acting as two distinct languages; firstly the ‘natural’ synthesizing function of imagination and secondly, a function which “practices analysis fiercely” against any frivolity. An inherent problem of language is its proliferation into mediocrity, triviality, and bad metaphysics contaminating any true art and science.⁴¹³ This defines the task for Condillac’s ‘well made language’ for his era and explains why a primarily analytical task is emphasised.⁴¹⁴

The Speechless Statue: What Distinguishes Sensation and Idea

What distinguishes the two texts, the early *Essay* and the late *Logic*, sees Condillac clarifying this analytic task around development of the mental life. *Treatise on Sensation* (1754) initiates the break from the *Essay* by introducing the famous image of the speechless statue in order to explore a capacity of ‘need’ as self-preservation in the individual.⁴¹⁵ By relating memory to present impressions, *Treatise on Sensation* develops an important distinction is between “sensation-actuelle” and “idée-intellectuelle.”⁴¹⁶ This difference is between the passive mechanism of a sensualism, and the active impressions which mental phenomena willfully compare signs.

⁴¹² Ibid ptII §153

⁴¹³ Ibid §159

⁴¹⁴ Ibid p194

⁴¹⁵ Condillac *Oeuvres Completes* p325a cf Aarslef (1982) p211

⁴¹⁶ Condillac *Traité de Sensations* II §29-31cf Aarslef (1982) p211

However, this distinction also leads to two readings of Condillac's thought depending on whether his conjectured statue is understood as a receptor of natural sensations or represents a psychological past to which the present thought, through memory and its heightened form of imagination, must actively compare. This leaves a further ambiguity that extends to whether the idea-sign relate to successions of nature or successions of language. Condillac seems to have been aware of this interpretive point around the 1754 edition of *Treatise on Sensation* since he modified the later edition included in his *Oeuvres* which was published posthumously in 1798.⁴¹⁷ This clarified the original argument in a section, 'Of ideas which the human being can acquire when limited to a sense of touch' with the later emphasis on the distinction from sensual impressions offering to knowledge a "light which guides it's merely instinct." The function of idea-sign was to abstract that which existed 'naturally,' but taken up by a measure of language;

"It's [the statue] method in acquisition is to observe in succession, one after the other the qualities that it attributes to objects: it analyses naturally but it has no language. But an analysis without signs can only give a limited knowledge...and since it has not been possible to put them in order the collection must be very confused. Thus when I treat what the statue acquires, I do not mean to say that it has knowledge of which it can render an exact account of itself, it only has a practical knowledge [...] To acquire a knowledge it is necessary to have a language: for the ideas must be classified and determined which presupposes signs employed according to measure. See the first part of my *Grammar* or my *Logic*"⁴¹⁸

This distinction between purely instinctual knowledge and a theoretical knowledge, clarifies the values of language explored in the earlier *Essay*. When this is taken up in the *Treatise on Animals* (1756) it demonstrates how qualitative differences in signs divide man from animals. This distinction effectively divides the specifically human psychology into two modes; the 'self' of habit and a 'self' of reflection - this re-opens a domain beyond the statue and the animal by virtue of the artifice of the instituted signs of language of man. Therefore both texts, the *Treatise on Sensation* and the *Treatise on Animals* refers back to the *Essay* and both pursue distinct aspects of a fundamental problem that Condillac attributes to modes of synthesis of knowledge - human nature and the artifice of language. The qualitative differentiation that appears as the

⁴¹⁷ Aarslef (1980) makes this comparison p213.

⁴¹⁸ Condillac *Traité des Sensation* II viii §35, cf Aarslef (1982) p214

idea-sign supports the thesis of the earlier *Essay* and defines a methodological basis for the legacy that reached the revolutionary era through the *Logic*.

The Idea-Sign Retains the Twin Disciplines of Thought

Condillac's legacy for a Science of Man was notably emphasised during the 19th century through the speechless statue of *Treatise on Sensation* rather than looking back to the *Essay*. This lopsided view reflects the way Condillac's work was taken up in the post-revolutionary period, an era associated with the intellectuals of the Directoire, amongst them Destutt de Tracy and Jean-Pierre Cabanis.⁴¹⁹ There was a political dimension to publishing Condillac's *Oeuvre Complete* in 1798 whose ambition was for founding a radical educational program allied to the project of a Science of Man. Later, the reaction against the Ideologues after the demise of the Directoire and the revolutionary legacy during the early years of the 19th century, served to focus on the perceived intellectual problems often attributed to dangerous ambitions of 18th century thought. Condillac's case served a condemnation that focused on the specific understanding of Sensationalism as a materialism which had left a particularly negative impression on the 19th century mind. To see Sensationalism as a system of logical signs pursued through a rule based method downplayed the debate on the dynamics of language and its expressive qualities in active life. In the 19th century, an emerging Positivism was struggling to define an idea of history through its ambition for a more precise knowledge, but this was contending with a romantic reaction. Both had a tendency to dismiss the subtleties of a conjectural method of thinking practiced by 18th century thought in which the debate over origins of language was pivotal.

In this respect, the subtitle of *Logic*, 'the art of thinking' reflects both its historical relation to the *Port Royal Logic*, and also marks out its ambition in giving the new disciplinary matrix as an ambition of conceptually extending a general knowledge, an ambition motivated specifically by a Science of Man. The nature of this discipline was not something simply engaged with by the uninitiated. It was an 'art' whose status, like any specific discipline, was to be understood in relation to this core identity. The aims and subject matter to which it was employed, conveyed a

⁴¹⁹ Aarslef (1982) p218

complicated legacy of a discourse on a Science of Man at the root of Condillac's oeuvre. It can be argued, that what was taken up by its practitioners engaged with Condillac's suppressed Protean vision. Sensationalism's pan-logical possibility was a legacy not always expressly written down; yet this carried over into various practices and contemporary disciplines what was historically understood of a Science of Man in Condillac's era.

Despite these specific relations being blurred over time, Condillac's *Logic* offered a disciplinary practice - rather than a specific doctrine of thought - whose emphasis was derived from the core aims of an earlier debate over the values of language. The example of *Les Monadés* shows how this internalised a thought which was promoted in revolutionary era as a Science of Man, connecting Condillac's sign to the wider ambitions of Enlightenment thought. Premised on something like the empirical 'existant' that was symbolised by Condillac's early essay, the wider disciplinary objective for the diverse practices around a Science of Man derived conjectural possibilities that extended beyond associative or functional forms of knowledge. To understand how the idea-sign influenced the wider field of disciplinary practices of the day, one can specifically examine how this interacted with the historical doctrine of physiology.

Physiology as the Discipline of the Body

Prior to 1800, what was understood as the natural science of the body drew on two distinct disciplines, anatomy and physiology. At the start of the 19th century these converged. The two disciplines were earlier considered to be separate branches of knowledge, differentiated between a science and an art, and pursuing their own systems of practices and activities. There was a hierarchical relation between them with the higher status given to physiology which was considered the scientific discipline pursued in a philosophical fashion; anatomy stood as the manual art and held the lower status.⁴²⁰ During the political, social and intellectual upheavals of the revolutionary era, anatomy, and its allied surgical practice, challenged for the status of a science. In a contemporary sense, the term physiology brings together the theoretical and the manual aspects of the experimental science of physiology, but until the early 19th century the

⁴²⁰ Cunningham (2002) p632

physiologist was closely allied to the natural philosopher through a shared enquiry into the order of nature.⁴²¹ Both retained historical links with Aristotle's science in its extended general knowledge responsible for defining an 'animal economy' and the functioning of soul.

The historical practice of physiology gave a sense implied of its status as a *disciplina*. This was what a *discipulus* followed as the branch of knowledge to be learnt and pursued by a system of rules for its active practice. In this sense, the discipline means the counterpart to a doctrine upheld as what one should think. The discipline describes what one should do or how one should behave, and is necessarily connected for the *discipulus* through the disciplinary matrix; this embodies the knowledge practice handed down through history which it extends as reproducible discourse. The specific relationship between a discipline and its doctrine gives the status of its knowledge which can be modified over time. In the case of physiology, the status of its knowledge had to function as a nature of man, his place in the world, which had historically aimed to carry a *divinatio*.⁴²² What was condensed therefore into the physiological discourse had a confluence with the debate on origins to which Condillac engaged with through language, the original problem of the body that was driving both a scientific study and medical practice. The idea-sign lent itself to a central branch of this a project to which a 'new language' gave the specific context under which the third meaning of the discipline becomes apparent, namely 'to discipline.' This indicates the corrective accorded to the rules of practice that extends to theological and political spheres of thought. This was important for the ambition for the Science of Man.

The new context emerges in parallel to what an early modern era physiology has as its core identity. Jean Fernel (1497-1558) is credited with defining a modern physiologists discipline,⁴²³ and it is worth looking at an example from his *Seven Books on the Natural Part of Medicine* (1542). It sets out a data of the body acquired from an anatomical practice and dissection and gives a perspective for a physiology whose work looks beyond its structural anatomy to the

⁴²¹ The formulation a history of modern physiology is attributed by Cunningham to the work of Claude Bernard, notably *Introduction to the Study of Experimental Medicine* (1865)

⁴²² A parallel to the terminology in Foucault (1970) p59

⁴²³ Georges Canguilhem takes Fernel's *Physiologia* in *Universa Medicina* (1554) as detailing the outline of the discipline. Cangilhem (1994) p91

discourse on the nature of man. This is a philosophical discourse, a *scientia*, that lays out a schema of knowledge beyond what could be observed through evident empirical phenomena. The discipline of the body served a higher task than the manual based anatomy which was limited to an art. Physiology carried an abstract ideal; “the nature of the healthy man, of all his forces and all his functions,” and this necessitated a schema for the universal science of human nature.⁴²⁴ The physiologist, drawing on limited anatomical data, presented primarily a theoretical discourse and needed a philosophical base. Jean Fernel took philosophy as “the mother of all the arts,” and it is worth quoting in some length what he programmatically understood by a philosophical analytic on which a modern physiology relied, and by implication what it excludes.

“The truth of that reason is the light of the mind. Those who disdain it can neither grasp the causes of things, nor investigate what is true in anything, nor distinguish truth from falsehood. Deprived of that special illumination all their life is wasted in useless effort, they are dragged back and forth in and rash blind effort. - [...] By contrast are those who, animated for philosophy by an admirable ardour enter into the path where so many men of genius have left their footprints. Having first received the knowledge of the thing which fall under the senses, they are little detained by the basic contemplation of those things but having advanced beyond them by an effort of mind, they then reach the point from which, as from preceding causes, the things of sense themselves appear to have taken their own origin. From this point they will gradually ascend higher, and finally they will attain by thought the regions where the mind, fulfilled, reposes in the ultimate. Since the human body has now broken down then anatomy into parts accessible to the senses, from these we now need to pass on to those things which are learnt by thinking alone [namely a physiology] and we need to investigate, at a higher level, from what elements each part is made, what is the mixture of the elements, what is their temperament, which virtues lie within the parts, by what spirit and heat they are maintained. When all this has been discovered and understood by analysis, then, by the method of composition, it will become clear what are the causes that bring everything about, which humours are produced by these causes, what functions are of the particular parts, and what is the natural office of everything. This is the way of doing

⁴²⁴ Fernel in *Physiologia* cf Canguilhem (1994) p91.

physiology which establishes the natural account of man by the power of demonstration.”⁴²⁵

Physiology’s systematic doctrine for illumination of the ground of a natural account of man looked to the anatomical analytic to expand a philosophical understanding of natural man. When Fernel moves from an anatomy to a physiology by the extension of the lower analytic to its higher synthesis, it is justified from the perspective of this task of the higher discipline which is a truth for the natural philosophy.

From this core ambition, other notably ‘good practitioners’ were René Descartes and Albrecht von Haller, both of whom followed a similar method to establish units of the body delimiting sources of motion (of soul, spirit) from which to compose the schema of explanation of the nature of man. In René Descartes *Treatise on Man* (1662) his discourse draws on the sub-visible structures of the body in its workings beyond the mechanics of the body in looking to the functions of bodies in general. But it is Albrecht von Haller who is held to have introduced to physiology the specialised training that could distinguish it from a general medical practice. By repeatedly insisting that good physiological practice was grounded in anatomical experiments, he intended to determine the ‘fabric’ of the body.⁴²⁶ He gave the innovative perspective to which his anatomical program took the cadaver as limited in use and looked instead to experiment on live animals. Significantly, this divided the opinions of contemporaries; in Haller’s view, experimentation through vivisection meant that, -

“a single experiment has refuted the laborious figment of many years [of work]. This cruelty benefits true physiology more than almost all other arts by the joint harmony of which this, our science, thrives.”⁴²⁷

Hence experimentation was given a unique status, and Haller called it his “unique oracle.”⁴²⁸ Recourse to studying the living body meant that an anatomical art of intervention could support a wider physiological discipline in its production of the general physiological discourse on man. Haller maintained this discourse in its separate and synthetic aspect. -

⁴²⁵ Translation from Jean Fernel’s *Seven Books on the Natural Part of Medicine* from the text of Figard (1970) p49-50, cf Cunningham (2002) p647

⁴²⁶ Canguilhem (1994) p92. see Cunningham (2002) p652, also John E. Lesch (1984) p20-22.

⁴²⁷ Haller cf Cunningham (2002) p652.

⁴²⁸ Haller 1758b pp5-6, cf Cunningham (2002)p653

“The whole of physiology is a narration of the motions by which the animated machine is moved.”⁴²⁹

Haller’s was a modern analytic which he characterised as an ‘animated anatomy.’ This impressed many contemporaries including a young ‘associé anatomiste’ of the *Académie Royale des Sciences* in 1780’s called Felix Vicq d’Azyr who reflected on this ambition for a progressive science associated with the disciplinary task. Later he wrote, -

“At the beginning of this [18th] century, Physiology was no more than a vain assemblage of systems; it is Haller who dispelled these; he has laid the foundations for a science which has no more in common with the old science than the name. Let us offer to the great man the homage of our recognition, and let us show him our respect by following in his footsteps...”⁴³⁰

Seen as the foundations of a new science, the central importance was felt in grounding the disciplinary matrix that physiology aspired to. Historical physiological models looked to various sources, chemistry in Paracelsus or mechanism in Friedrich Hoffman or hydrostatics in Stephen Hales, but what was important was establishing from known anatomical facts the physiological discourse which could stand as a nature of the body and its extension to a Science of Man. No doubt this discipline “remained ideological”⁴³¹ until the advent of experimental physiology in the 19th century, but during this time the aims and goals of physiology’s socio-political uses was also undergoing a radical shift parallel to what was earlier envisioned as the extended horizon of the the physiological *disciplina*.

The Physiological basis of the Medical Debate

The physiological *disciplina* was closely tied to a medical discourse on the status of what kind of knowledge was appropriate for the study of the living body. This was defined around the basic arguments of the mechanist-vitalist debate which emerged in the mid 17th century. Georges Canguilhem succinctly summed up its fundamental distinctions in, “to act it is necessary to localise;”⁴³² he meant that pursuing an effective medicine was dependent on a localisation that

⁴²⁹ Haller 1757-1766, Vol.1, cf Cunningham (2002) p655

⁴³⁰ Vicq d’Azyr 1786, Vol. 1 pp3-4, cf Cunningham (2002) p657.

⁴³¹ Canguilhem (1988) p54-55

⁴³² Canguilhem’s outline of ‘the problem’ in *The Normal and the Pathological* p39-40

could define an effective hierarchy of disease. Canguilhem describes how until contemporary germ theory appeared in the 19th century, early modern physicians of the 17th and 18th centuries employed diverse ontological models as the basis for exploring the nature of sickness from the physiological point of view. For early modern medicine, it needed to contrast itself with a legacy left of Greek medicine, which was not localised as such, but used the dynamic or holistic nature of man judged through an evident equilibrium whose nature grounded a general theory of health and disease. This dynamism was common to Aristotle's predecessors, and gave the image of the body composed of complex of elemental powers being opposed to "another by reason of being what it is."⁴³³ The balance of the four humours was an equilibrium that could sustain variation up to a point, oscillating around a mean. Ancient medical theory looked towards the mean as the threshold where disease appeared as a reaction to the disequilibrium in the economy of the body through its relation to nature; medicine's basic aim was the techniques of restoring this balance as far as possible. Like language, medical knowledge was an artifice, but one which specifically aimed at imitate natural forces and, therefore, required an understanding of nature. Medical representations of disease, whether as foreign substance or the opposition of forces, require an acquaintance with this natural state which normal life looked to regain. The functional role of physiology was to give this grounding; in turn physiology extended its knowledge to a theory of disease only by delimiting it to a field of difference prior to engaging in effective medical action.

What distinguished modern medicine by the start of the 18th century was that both mechanists and vitalists could relate to Descartes dualism, since all approaches shared the struggle to overcome the scholastic and Galenic notions embedded in medicine's history. Both Descartes philosophy and the mechanics of Galileo informed the rise in iatromechanism even prior to Newton's publishing of *Principia* (1687).⁴³⁴ Iatromechanism ascribed movements of the machine to a soul or psyche much as Aristotle or Galen held a spiritual, vital or rational principle; it considered all matter to be passive. By the 18th century the Cartesian physician Friedrich Hoffman (1660-1742) could describe a modern nature of the body as a mechanism but with God as the supreme mechanic, the prime mover who accounted for its equilibrium. Motion in the

⁴³³ T. J. Tracy (1969) esp. p23.

⁴³⁴ See Haigh (1984) p17-28, for general histories of medicine; Erwin Ackerknecht (1955), Lester S. King (1958) and W. Bynum and Roy Porter (1993) 2 vols.

machine was explained through the fluids of the body, blood, lymph; while ‘animal spirits’ and the ‘subtle fluids’ were the power by which the sensitive soul impressed itself. From this model, health is given to fluent and well ordered movements and death ensues when corporeal motions become terminated and Hoffman’s *Fundamenta Medicina* (1695) exemplifies a dilemma of iatromechanism by reducing to an intermediary substance the interface between matter and spirit; this was a mechanism that appeared as a contained animism.⁴³⁵ Herman Boerhaave’s (1668-1738) iatromechanism described a nature of bodily functions through the concepts of pipes, sieves and presses, deliberately avoiding any speculation on mind/body relations beyond the pragmatic needs of a medicine. By refusing to be drawn into metaphysical speculation on primary causes,⁴³⁶ iatromechanics could effectively give explanations for a pragmatic need of localising organic functions; at the limits of this knowledge they deferred any questions of purposeful activity in whole organisms.

An organicist-vitalist thinking arose to prominence through Jan Baptist van Helmont (1577-1644) opposed a mechanistic reduction through an organicism ascribed to a dormant *archaeus*, a form of sensitive soul which both exercised dynamic control over the body and accounting for its ‘special character.’ As the “governor of generation” this principle of transformation in matter explained through an iatrochemistry that grounded observable phenomena through vital concepts and was strongly influential for later physiological thought.⁴³⁷ A similar perspective saw Georg Ernst Stahl (1659-1734) rejecting mechanism as inadequate for addressing the organism as a whole and described instead the living body as a dynamic and reactive complex. By taking the holistic perspective to explain purposive activity, Stahl accorded the very qualities defining living bodies with the form of Newtonism that took an existence of forces as in some way immanent in matter. Living force had to explain “the conservation of an eminently corruptible body, the faculty of force with whose aid the body is sheltered from the act of corruption;”⁴³⁸ once this force was withdrawn, death ensues. But this also needed a concept of conservation that

⁴³⁵ An outline of Hoffman views appears in the introduction to Lester S. King’s translation of *Fundamenta Medicina* (1971)

⁴³⁶ Commentary on Herman Boerhaave in King (1958) p59-121.

⁴³⁷ Main text is Walter Pagel (1982)

⁴³⁸ Georg Ernst Stahl *Theoria Medica Vera* (1738) pp200-201, cf Haigh (1984) p27

a ‘soul’ could direct through the activities of the living body and would also explained motions given to unconscious and automatic functions that were evident in habituated actions.

Stahl exemplified the epistemological aspects emerging at a time when the delimitations between a physiology and a physics were less clear. Taking mechanical description as inadequate to the task of establishing a physiological synthesis, Stahl’s approach drew on dynamic physiological models integrating an epistemological model from physics. An important justification for this strategy came from Francis Glisson (1597-1677) who defined a ‘life of matter’ through the properties of irritability; this general property of the constitutive fibres of the body self-subsisted through an immanent energetics. The life of this matter was primal force, a ‘biarchia’, or ‘biousia’⁴³⁹ possessing properties that offered the useful potential for explaining latency in functional faculties of perceptions and reactions, pleasure and pain, and general bodily motions. The concept of irritability accounted for a power of spontaneity to act and react,⁴⁴⁰ and substituted for the terms of *actio* and *passio*, classical terms of life and motion in all nature, redeployed to accord with the more contemporary anatomical ground.⁴⁴¹ The irreducibility of matter and its properties lent Glisson to a theory of ‘animal fibres’ that were disposed to micro-movements: as an account for the latency evident in physiological responses this could be associated with memory. When *Principia* was published it fell to post-Newtonian theorists, such as Stahl, to suggest an obvious parallel in the link between concepts of inherent irritability and a universal gravity.

Glisson’s irritability was also taken up by Albrecht von Haller in *The Sensible and Irritable Parts of the Body* (1749). What was significant here was that Haller specifically emphasised differences between locally visible irritability and universal attributable force to which a historical concept of the vital could attribute predispositions of contraction and predisposition to feeling. Hence his anatomical and experimental work analysed the nature of these forces although in a consciously limited way,

⁴³⁹ Terms used in Glisson *Tractatus de natura substantiae energetica seu de vita natura ejusqua tribus primis facultatibus, vegetiva, appetitiva motiva naturalibus* London (1672) p192 cf T. S. Hall (1968) p11

⁴⁴⁰ Glisson carried this over from Galen, see Temkin (1977) p290

⁴⁴¹ According to Starobinski he “animalised” scholastic thought. Starobinski (2003) p110-112

“The theory as to why some parts of the body are endowed with these properties and some are not I shall not meddle with...for I am persuaded that the sources of both lie beyond the reaches of the knife and the microscope, beyond which I do not chuse to hazard any conjecture, and have no desire to each what I am ignorant of myself.”⁴⁴²

His ensuing localisation was to an ‘animal fabric’ that retained certain conceptual and historical precedents, although in a limited way. Starting from a historically problematic concept attributed to life, Haller’s experimentation moved towards the vital parts of the body through a methodology that established, on the basis of his observations, what could be localised by systematic analysis which then offered explanation through these vital properties. On the other hand, Stahl’s dynamic vitalism lent itself to a different methodology; he analysed phenomena in the whole as they were apprehended around an idea of what vitalism attributed to life. This shifted the problem to the level of the concept.

While the former localised the properties of the body through the analytic approach, the latter’s wholism retained what was attributed to the vital idea of the whole as the problem of the synthetic element. In this way the *disciplina* of physiology operated on two levels and were the intellectual traditions which French medical circles of the Enlightenment were immersed. Later these informed the Science of Man that culminated around the revolutionary era.

Montpellier Medicine and the Hippocratic Revival

In addition to the contemporary medical debates, French physicians also drew on the philosophical debates of the era including those of Maupertuis and Condillac. The famed Montpellier School of Medicine was established in 1220 and already had an illustrious history which it maintained through the late Enlightenment period. Individual physicians had contributed to the Encyclopaedia project, as Montpellier medicine gained a reputation of driving a Hippocratic revival.⁴⁴³ From a contemporary physiological context this stood against mechanistic reduction of medical thought through the strong influence of Stahl’s vitalism. Moving between

⁴⁴² *The Sensible and Irritable Parts of the Body* London (1755) p2, cf Thomas S. Hall (1968) p14.

⁴⁴³ Denis Diderot was already drawing on the idea of a medically inspired anthropology for his *Elements of Physiology* (1773-1774) This extended through the coterie D’Holbach, which played a significant role in the French conception of a Science of Man.

Stahl's neo-Hippocratic dynamism and the doctrine of sensibility, Montpellier medicine offered two things; firstly, the physician's sensitivity as the disciplinary particularity that was practiced in the new doctrine in sensibility. Secondly, through a conceptual emphasis on human experience in general, this could be extended in its possibilities to an expanded human knowledge. It was the commitment to a wider discipline of knowledge, despite any specific interrelations not being clearly defined, that gave the ambition for contributing to a future science which fed into the general Enlightenment thinking; one example appears in the project for the encyclopaedia.⁴⁴⁴

This gave the context for an inter-disciplinary perspective on a Science of Man looking for new approaches to physical and social observations. For example, by accounting for the distribution of human types through a medical demographic or anthropology, the controversial practice pursued through interpretations of physical features such as gender, constitution and race, was seen from the medical perspective as the sensitivity to difference. Paradoxically such a new approach was intended to resist an idea of universals as a feature of the mechanistic/Cartesian notions of the body, through the concern with the function of living organisms in a general sense. The dynamic approach was opposed to static studies of structure, holding the idea of function in relation to the wider environment which was only metaphysically grounded and therefore subject to dispute. But the neo-Hippocratic dynamism had an epistemological commitment to Newton which, like for Haller and Stahl, meant only the promise of a modern grounded science. -

“One sees however mathematicians who use the letters X and Y to designate unknown quantities, and with so much greater success that they discover by such means truths inaccessible to other philosophers.”⁴⁴⁵

This was an epistemological value given by the exemplary Montpellier theoretician Boissier de Sauvage (1706-1767), a trained botanist who brought to medical theory its rules of classification, as well as being a confirmed Newtonian who drew together principles of George Ernst Stahl's vital soul. This related the use of an abstract principle for an unknown vital force, while aiming to inform observations of the pulse, of respiration and other involuntary movements that required moderating in an intelligent way with a new theoretical basis.

⁴⁴⁴ Texts that cover the Montpellier Physicians; François Duchesneau (1982) pp141-170, Lester S. King (1978)

⁴⁴⁵ Boissier de Sauvage *Nosologie méthodique, dans laquelle les maladies sont rangées par classes, suivant le système de Sydenham, & l'ordre des botanistes*. (1771) p49-50, par 242 cf Martin Staum (1980) p80, see also Moravia (1995) pp51-52.

Following from this, the medical circles of Montpellier gave various formulations of neo-Hippocratism; for some it followed close to the classical tripartite scheme encompassing the ‘physical’ ‘mental’ and ‘passionate’, for others it could be reduced to bipolar relation of the ‘physical’ and the ‘moral.’ There was, however, never a simple relation since the emphasis was on the reciprocity which was a question of balance, of economy and norms, that could compose the wider physiological synthesis. And this followed the prominent awareness of medicines historical relation to a Science of Man, to which the idea of a holistic medicine gave it relation to society. However, it is a mistake to see this as a narrow ideological program; what this social aspect of medicine drew from a particular reading of the Hippocratic tradition, gave an understanding of health not as an individual affair but one dependant on the social practices and milieu to which one must practice an environmental thinking.⁴⁴⁶

An influential Montpellier physician was Theophile de Bordeu (1722-1776). He made distinct impression on philosophical circles to the extent that he appears as the principle character in Denis Diderot’s *Le Réve d’Alembert* (1769). Bordeu held that the equilibrium of two inversely proportional forces, sensibility and muscle mobility (irritability) was controlled by the properties of a primary structure, such as the nervous system.⁴⁴⁷ Like Haller, this divided properties into sensations and motions through which Bordeu aimed to isolate the limits of observable movements. The limit was interpreted as defining where movements produced from unobservable sensations, are balanced by involuntary movements produced by the phenomena given to sensations. Like Stahl, the living matter, the *actio* and *passio*, was distinguished by this functional expression of movement; against this, certain feelings and sensibilities could remain latent and unexpressed. Through thinking this latency as the ‘federative’ concept of the body, with centres of sensitivity subordinated to the brain, individual characteristics could be attributed to the function of the equilibrium between the centres of sensitivity; the activity in the whole was thereby a tension subsumed and distributed it through the nerve network.⁴⁴⁸ This gave a view of the body that had no absolute unitary being, but was a decentralized, semi-autonomous

⁴⁴⁶ Williams (1994), p8-11.

⁴⁴⁷ Bordeu ‘Researches sur les Maladies Chronique’ (1775), *Oeuvre Complet* (1818) II, p924, cf Staum (1980) p81

⁴⁴⁸ see Moravia (1978)

composite of organs to be interpreted through a complex phenomenology which in no way could be deduced *a priori* from known laws of a mechanical physics. Bordeu's famous metaphor of this dynamic image was the swarm of bees,-

“A swarm of bees gathered in clusters and suspended from a tree as a vine, each part is, so to speak, not an animal, but a kind of self-contained machine which in its fashion concurs in the general life of the body.”⁴⁴⁹

Transforming an idea of a Hippocratic unbroken circle into an active image of distributed sensitivity through living matter, this followed a combination of neo-Hippocratic empiricism with Stahl's form of holistic vitalism. The vital concept of the living body was an impulsive and dynamic sensitivity. Through this innovative account of the inner functioning of the body, the potential was for a higher activity of human life. This was widely influential.

Another strategy appears in the influential Montpellier physician Paul Joseph Barthez (1734-1806). The title that cemented his reputation explicitly announced its ambition for a Science of Man. *Nouveaux elements de la Science de L'Homme* was first published in 1773 but was augmented and republished in 1806.⁴⁵⁰ Barthez, perhaps the most famous of the Montpellier physicians, produced the most influential synthesis of vitalist thought. He arrived in Paris in 1754, moved in D'Alembert's circles and wrote for the *Encyclopédie*. The significance of *Nouveaux Elements de la Science de L'Homme* is in Barthez explaining an epistemological value ascribed through a 'vital principle' that was neither a metaphysical or occult force. -

“I never used the term vital principal to explain any of the phenomena of life but [employed it] to make comprehensible certain new conclusions in respect to the effects of these phenomena....”⁴⁵¹

The term was understood as a complete unknown, in the Newtonian sense. With no 'essential nature,' it stood for a power of explanation and represents his attempt is to depart from the obscurity of terms dominating preceding metaphysical disputes.⁴⁵² The vital principal was the “necessary abstraction” required to make certain statements about observed phenomena of experience. Barthez did not assume a vital principal that “orders or regulates its acts,” rather it

⁴⁴⁹ ‘Reserches Anatomique sur la Positive des Glandes et leur action,’ Bordeu (1818) I p163n, cf Staum (1980) p82

⁴⁵⁰ A good account is given by Kanamori (2005)

⁴⁵¹ Barthez (1806) Vol. 1 p20, cf Williams (1994) p47,

⁴⁵² Comparable to Kant's Gemüt

proposed a “faculty attached to the combinations of movements and matter of which the living body is formed.” In this way, he makes a significant distinction from Stahl’s thinking of the single principle of ‘soul,’ while also distinguishing the vital from simply attributing separate living forces to different properties such as irritability and sensibility. It was considered more a “natural and philosophical” principle according to Barthez, to attribute the unknown entity for the single principal that expressed its effects in different ways. The proposition was that,-

“good philosophical method in the science of man requires that one attribute to a single principle of life in the human body, the living forces that reside in each organ and are responsible for its function.”⁴⁵³

Barthez is careful to refer to the ‘vital principal’ as an abstraction employed only to facilitate and ground discussions in conceiving of living activities whose inner dynamics were not understood yet produced the singular effects observed. The justification for this strategy is the method of induction taken from Baconian enquiry into a natural science which assumes that empiricism “could not teach what these causes were in essence,” rather the central aim was to abandon looking for ‘essences’ and ‘final causes,’ and focus on a phenomenology of experience.⁴⁵⁴ But Barthez also read David Hume’s *Treatise on Human Nature* and agreed that we imagine succession to mean cause and that this imagination was all that we could hope to achieve in the way of certainty. The element justified an abstract idea to substitute for derived causes attributed to the variety of principles, forces, and faculties, all of which were unimportant if they were in their nature unknowable. In this sense, Newton is the real inspiration; *Nouveaux Elements* aims to extend this line through a privileged relation by which medicine can determine phenomena of human experience. The latter is its philosophical privilege which he attributed to Hippocrates.-

“Hippocrates in his genius saw that human nature cannot be fully understood by anyone who does not possess an entire system of knowledge of the healing arts.”⁴⁵⁵

The relation given to this neo-Hippocratic practice with the status of a new form of empiricism for modern practitioners of medicine, Barthez framed as offering a new scientific language. But this depended on a new physiological synthesis. The new language followed from taking the

⁴⁵³ Barthez (1806) Vol. 1 p97, cf Williams (1994) p47-48, see also Haigh (1984) p37-44, Staum (1980) p83-94.

⁴⁵⁴ Ibid Vol. 1 p7-8, cf Williams (1994) p49

⁴⁵⁵ Ibid Vol. 1 p28, cf Williams (1994) p50

abstract element of knowledge as substitute for the evident vital element in observation; an ambition that clearly puts physicians in the precarious position.⁴⁵⁶

At the heart of this method was the observational practice of functional aspects of life phenomena. For the Montpellier physician of the 18th century, observing meant displaying a sensitivity to the differences in these living phenomena, and integrating their significances in an image of life. From the medical perspective this meant the organic body displaying symptoms and qualities indicative of the sympathies and synergies of the organic whole. The holistic methodology proceeded by the progressive analysis to the limit of the observable; but since the limit of observation was an epistemological barrier that necessarily withheld phenomenal complexity, the organic phenomena could not be reduced to determinable laws.⁴⁵⁷ The physician had therefore to account for both internal and environmental influences on the organism under the terms of vital sensibility. For Barthez, this abstracted vital principal was intended to give an open variable by which living phenomena could express significance without being directly epiphenomenal. Observed difference was interpreted as the modification under the vital principal whose transformation indexed the varying circumstance of the organism. The significance of the vital principle was in substituting for direct causal thinking while retaining the set of possible relations to describe what was becoming evident in a living economy.

As a concept of observable differences, this also stood as an expression of forces. These were the organic forces that demand various regimes of management which require further hypothesising. In fact, Barthez was famously careful in the use of this method, but the paradoxical nature which his vital principle tried to embody readily lent itself to anthropological speculation. By opening to the importance of natural diversity, as an order of difference that could also imply a ‘natural order’ as dynamic interplay of ‘vital force’ and physical states, this could be conceived as a social typology that extended to ideas of race and class.⁴⁵⁸ Montpellier vitalism, however, remained relatively apolitical although the vital principal implied to many a dangerous atheistic materialism. It also opened the ambition for an autonomous knowledge which promised to

⁴⁵⁶ See comments by Foucault (1975) p55-56

⁴⁵⁷ Following Albury (1977)

⁴⁵⁸ See Williams (1994) p58

extend towards a wider Science of Man. In this way Montpellier physicians gave the medical context for a new empiricism by which a true method should hypothesise with the promised of breaking out of dogmatic systems of the past, although the method was clearly fragile and prone to reciprocity.

Revolutionary Influences on Paris Medicine

From 1770 onwards, Parisian physicians already initiated the task of the reform of French medicine inspired by wider Enlightenment themes and the idea for transforming medicine in accordance with a general Science of Man. This is characterised by its ambition to unify the sciences under new considerations of the human species in its relation to nature. In France this project took up the reform of national institutions by focussing on the hospitals and follows advancements in the medical sciences. Renowned animal and human anatomist and physician Felix Vicq d'Azyr has been credited with being the motivation behind medical reforms and broadening the scope of their investigations to include environmental factors, such as meteorology, water quality, public sanitation. During 1770's Vicq D'Azyr gave free lectures at the College Royale; here it was medical theory that represented a 'certain method' from which a proper pedagogical method would naturally follow and which was attractive to the politically minded physicians in Paris.

Reforms meant a broader perspective on the medical task which aimed to account for disease across the nation. In 1776 Felix Vicq D'Azyr took up a post as the Commissioner-General of Epidemics at the newly formed Société Royale de Médecine et Epidemics, a rival scientific and administrative body to the older College Royale. The new Société was commissioned to explore the causes of epidemics and compile a medical topography of France and was also given responsibilities for distribution and sale of the mineral and medicinal waters and the licensing and sale of patent medicines.⁴⁵⁹ This provision of medical services led the institution to have a powerful national profile through its handling of epidemics, and assessing the abilities of local physicians. Paris also had a reputation during this time as the home of scientific charlatany in

⁴⁵⁹ Broad study in Hanaway (1972), see also Williams (1994) pp67-73, and Ackerknecht (1967) pp25-28

the medical field and producing fashionable medicines as new forms of medical knowledge. Bordeu had noted of Paris that “money, rouge, braggadocio, and ladies favours are all that is required of a physician,”⁴⁶⁰ and it was perhaps against this standard of practice that the figure of Hippocrates stood for a method of self-criticism by which, along with the proper application of a method, a popular and humoral medicine could be debunked. But Felix Vicq d’Azyr was also a follower of Condillac and wrote a *Nouveau Plan de Constitution pour la Médecine en France* to be submitted to the constitutional assembly in 1790 to initiate a new clinical approach that stressed the need for a new language to fix fleeting corporeal phenomena and supersede an ‘old bookish’ approach to medicine. However, by 1793 this project was overtaken by the conditions of the revolution.⁴⁶¹

The turning point for the reform of medicine in France came in 1794. In the wake of the revolution, significant institutional changes saw old regime medical establishments which had previously dominated the dissemination of a theoretical practice replaced by clinical training in three hospitals, the *Ecole de Santé*, in Paris, Montpellier and Strasbourg. It is the Paris school which has gained a reputation following the revolutionary changes and which marks the start of a medical practice whose legacy has remained the subject of debate. A number of points can be made to indicate broadly the outcome of a well documented shift from 18th century medical theory to clinically based medicine at the start of the 19th.⁴⁶² Firstly, the practice of clinical observation meant surveying large numbers of patients aimed at a ‘living encyclopaedia’ that drew on the wider reaches of medical experience described above.⁴⁶³ Secondly, along with the importance accorded to a “nosological field,” was the use of statistics in relate to case histories of individual patients.⁴⁶⁴ Thirdly, this also came under an extension through various new techniques and technologies that affected practice and diagnosis; this is exemplified by Rene Laennec’s stethoscope, the new surgery of Pierre Desault and Xavier Bichat, and Jean

⁴⁶⁰ A Turin medical graduate, Francois Amedée Poppet (1753 -1799) worked in Paris and wrote “medicines that only work for a little time until they become unfashionable” *Le Médecin Philosophe* Paris (1787) II, cf Brockliss & Jones (1997) p643,

⁴⁶¹ General texts; Hannaway (1994) and Vess (1974)

⁴⁶² The two notable texts here are Foucault’s *The Birth of the Clinic* and Erwin Ackerknecht *Medicine at the Paris Hospital, 1794-1848*.

⁴⁶³ Foucault (1975) pp69-72

⁴⁶⁴ Ibid pp59-60,

Corvisart's new method of diagnostics.⁴⁶⁵ Finally, in addition to new techniques and mass observation, came an emphasis on the study of pathological anatomy as the new method of localising the study of diseases. In this way the clinics became transformed into places of research into what constituted states of sickness and health.⁴⁶⁶

It is from this broad basis that the 18th century ambition for a Science of Man drove new standards dominated by French medical thinking during the first half of the 19th century until it was displaced by a laboratory based practice.⁴⁶⁷ Along with the clinical shift in the wake of the Revolution, it was the mental disposition of medical practitioners that was being transformed; as one commentator notes, "they looked no longer backwards, but forwards,"⁴⁶⁸ although others have noted that Paris Medicine had a reputation as a polemical medicine,⁴⁶⁹ but these are elements which should not be taken as exclusive in the context of a nascent Positivism.

Concept and Method in a New Science of Man

The early lectures of Vicq d'Azyr's at the College Royale were attended by a young physician Pierre Jean Georges Cabanis. He exemplified these empiricist influences in an early essay of 1788 which described unsatisfied needs as nature manifesting "her desires in the most positive manner," as suffering transformed through instinct into the cause of autonomous movements.⁴⁷⁰ Instinct was seen as the "secret guide" by which primitive peoples observe the healing force of nature, instinctively resting and eating less during illness, which was a positive tendency. Yet

⁴⁶⁵ *Birth of the Clinic* discusses these as 'techniques of the corpse,' Foucault (1975) p127, p163.

⁴⁶⁶ Foucault emphasizes how Jean Corvisart and Rene Laennec's championed pathological anatomy as a new science. Foucault (1975) p135

⁴⁶⁷ Gelfand (1972), also 'The Pathological Tradition' in Bynum and Porter (1993) pp163-191.

⁴⁶⁸ This comment by Sigerist (1971) p291, cf Hannaway and La Berge (1998) p6

⁴⁶⁹ Recalling the mood from the perspective of 1836, Jean Baptiste Bouillard, a former student of François Joseph Victor Broussais noted the bullish implementation of an 18th century enlightenment positivism driven, not by social or economic forces, but "by individuals of genius, as voices emerging with positivistic clarity from a mass of confusion, making Paris clinical practices play out the conflicts and tensions between vitalists and mechanists, spiritualists and materialists (partisans of the present, partisans of the past and eclectics)." Another commentator, Louis Peisse reflecting in 1827 commented on the extensively political nature of Paris clinical medicine noting "the law of opposition and rivalry that prevailed" and took it that "the spirit of the system was really the spirit of the party." See Hannaway and La Berge (1998)

⁴⁷⁰ 'Du Degrés du Certitude de Medicine' Cabanis (1956) Vol. I p50-53. A translation by R La Roche as *An Essay on the Certainty of Medicine*, see p29. Main text on the life and thought of Cabanis is Staum (1980)

this declines as intellectual faculties developed. But this tendency could be reinforced through a true systematisation of memory and, in medical terms, would include the classification of disease symptoms. By noting durations of crises, of regimens and temperaments, the basis of his practice was to bring to full maturity a process of rationalising the empirical practices.

Cabanis was looking to supplement an empirical practice with the statistical theory of Marquis de Condorcet for approximating relationships that hold true by ‘degrees of belief and assurance.’ The possibilities in the new medical disciplines were an example of the ‘indefinite perfectibility’ of man;⁴⁷¹ this is Rousseau’s term in his *Second Discourse* (1754), but Condorcet had used this as a justifying principle in the posthumously published *Sketch for a Historical Picture of the Progress of the Human Mind* (1793).⁴⁷² Condorcet took this as the principle accounting for the twin tasks necessitated of historical progression: firstly, the transmission of collective experience, and secondly maintaining the possibility of overcoming dogmatic thought. But by foregrounding the observational method, Cabanis was following Condillac in this quest for a new language to be translated into the medical framework which was now looking to localise elusive pathological phenomena.

Cabanis’ exemplified the image of the physician in his mission as ‘consoler of the sick’ beyond wealth and fame, driven by a social conscience and patriotic duty to emancipate the public from superstition, which accords closely with Enlightenment thinking and understood as a task that was promoted as a true Science of Man. But the revolutionary turbulence gave this project an institutionalising turn by questioning the role of the state in medicine and education. Addressing the urgent need of the ignorance of the people led to an emphasis on intervention and the ambition to restore a natural equilibrium required, paradoxically, implementing a legislative intervention against false claims to knowledge. The necessity was for grounding knowledge in the face of an immanent need, not only against spurious medical practice, but extended to an

⁴⁷¹ Cabanis refers to “an enlightened friend” almost certainly Condorcet. Staum (1980) p106

⁴⁷² Condorcet (1976) p223

active regulation of other trades as where the public needed protection from the “swarms of impostors” and quackery.⁴⁷³

This was the background to the Science of Man as Cabanis approached it through the plan of learning described in *Coup d'oeil sur les révolutions et sur la réforme de la médecine* (1804). He drew together different scientific disciplines for the purposes of effective intellectual revolution in the new socialised state. Because medical power was the direct source of utility for constituting a basis of good rational philosophy unfolding as “the laws of the living machine,” the need was for ‘persons conversant with the animal economy’ to implement the task of a purification of great cities where great numbers of people were crowded together. Beyond advancing health and avoiding disease, these extended as physical-moral relations into ethico-political possibilities as Cabanis pictured an image of physical man struggling with the dynamic forces of the world of which the basis of future sciences are the indispensable tool for ‘naturalising’ society.⁴⁷⁴

Such physical-moral relations gave two principle branches envisaged behind the systematic union of knowledge by which an anthropological history could be transformed into a general science of human nature, -

“from the indications of the numerous points in which they are connected and related to one another, results what may be called the Science of Man or the Anthropology of the Germans.”⁴⁷⁵

The object of such an anthropological medical science was to determine the rules of a regimen, as a moralist striving to offer maxims of conduct and the legislator increasing prosperity for society generally. Here the physiological model formed the groundwork of the discipline whose knowledge extended as the important branch of natural history understood through an animal economy under the acute observation of the healthy and the diseased states of the system.⁴⁷⁶ In the widest sense this integration looked for physiological roots for general psychological

⁴⁷³ *Sketch of the revolutions of medical science views relating to its reform.* (translation of *Coup d'oeil*) p27 see also Cabanis (1956) Vol. II pp390-393. see also Foucault (1975) p78-85

⁴⁷⁴ ‘Cabanis (1956) Vol. II p77-79, also Cabanis (1981) p25

⁴⁷⁵ Ibid p77, presumably referring to Ernst Platner *Neue Anthropology* (1771-2) although Staum proposes Kant as another possibility. Staum (1980) p162

⁴⁷⁶ Cabanis (1956) Vol II p77-79.

phenomena which proceeded according to a principle that placed value on sensibility drawn from a certain application of Condillac's thought.⁴⁷⁷

Sensibility and Ideology in the Medical Project

The physiological synthesis drew on Condillac's *Logic* and the idea-sign as the modern philosophical practice to be taken up from the physiological perspective. Cabanis understood philosophy and physiology to always have informed each other through informing the relation between the physical and the moral: a rational analysis of the animal economy and its organic functions would delimit the intermediary space for designating how moral sympathy was the field in which the power of signs could distinguish impressions that communicated 'sensible being.'

This was a domain of moral hygiene that could inform Cabanis' mature vision for a Science of Man which not only reflected man's mastery of self but its extension and transformation around social being and even the species. Transforming physical habits, strengthening certain bodily organs, could extend the faculties and the senses of the soul to produce a new form of man. -

“a man susceptible to improvement is two modes, his physical education and regimen, in the most enlarged sense of these words, serve to develop the actions of different organs, rouse his dormant faculties, and in some measure create new sensitive powers. And when these instruments have acted upon several successive generations, *cæteris paribus*, men are no longer the same, no longer the same race.”⁴⁷⁸

The extension of this medico-philosophical project into a political task found its widest reaches around the ambitions for interdisciplinary revolutionary sciences converging in the practice of Ideology.⁴⁷⁹ But the object for analysis and possible science was fundamentally a problem of physiology which, from which the medical perspective, gave a composite object expressing symptoms over a duration and needed further differentiating into their fundamental

⁴⁷⁷ *Coup d'Oeil* points to Condillac. Cabanis (1806) p284

⁴⁷⁸ Cabanis (1956) Vol. 2 p77, Cabanis (1806) p22-23

⁴⁷⁹ Ibid Vol. 2 p77, Staum comments on that by 1800 both Cabanis and Lamarck were members of *Le Societè des Observateurs de l'homme*. Staum (1980) p168

phenomena.⁴⁸⁰ To Cabanis mind, since Condillac's era, practical progress had been made against that which "presented itself as obscure."⁴⁸¹ -

"The new question that presents itself is to know whether it is true, as Condillac and the others have established, that ideas and moral determinations are wholly formed and depend uniquely on what they call sensation...and whether, consequently, ideas come to us from our senses and exterior objects; or whether internal impressions contribute equally to the production of moral determinations and ideas following certain laws...whose constancy is revealed to us by the study of the healthy and the sick, and whether...observation directed by this new point of view will not allow us to recognise here too the laws of nature and state them with exactitude and clarity."⁴⁸²

A new perspective on vital phenomena, digestion, circulation, secretions depended on a principle of action whose determinations were 'confounded' in their effects. Following a localising of inner impressions, it presented the new frontier which a new medical language took up the ambition for an expanded general Science of Man.

The term Ideology, introduced in 1796 by Destutt de Tracy to the newly formed Class of Moral and Political sciences, distinguished between a physiological and a rational ideology. When Destutt focussed on the science of ideas it drew heavily on the perfecting of language, while Cabanis looked to the physiological synthesis grounding a knowledge to be refined for social and political action.⁴⁸³ Destutt told the institute that physiology required a, -

"vast knowledge, but in the present state of our enlightenment [can only hope] for the destruction of many errors, and the establishment of some precious, but still scattered and incoherent truths."⁴⁸⁴

By these twin approaches, a rational Ideology was the provisional knowledge for direct application to be extended through an emerging physiological knowledge, as "rational philosophy and physiology have always advanced together."⁴⁸⁵

⁴⁸⁰ Cabanis notes the 'Scottish philosophers.' Cabanis (1843) Préface p46-48

⁴⁸¹ Ibid p46

⁴⁸² *Rapports* Memoire 2:4, Cabanis (1956) Vol. I p174

⁴⁸³ Destutt's interest in mental habits drew on the perfecting of language for improving pedagogy in *Elements of Ideology* (1801-1815)

⁴⁸⁴ Destutt in 'Mémoire sur le faculté de penser' read on 2 Messidor IV *Mémoires de l'institut national des sciences et arts. Classe des sciences morales et politiques*, cf Staum (1980) p172.

⁴⁸⁵ *Rapports* Cabanis (1843) Introduction

Reform of a theoretical knowledge of the soul followed in the footsteps of Condillac and Diderot but extended with new and significant differences in post-revolutionary France. Addressing the newly founded *Institut National*, Cabanis looked forward to the establishment of a Science of Man as an autonomous science of human behaviour on the verge of its ambition of extending the human faculties necessary for the conservation of life.⁴⁸⁶ -

“Are we now in a state to make dependant certain properties communicated in all living beings...and tied in to the fundamental laws of sensibility?... intelligent judgement and the will’s desires, executes its functions, more or less necessary in the conservation of life. [...] The diverse states which affect one another are different considerations of the physical and the moral...the operations of the intelligence and the will confounded at their origin, with the other movements of life: this is the principle of the moral sciences that goes back to the physical domain: a branch of the natural history of man.”⁴⁸⁷

Taking its practical approach from the historical knowledge of man had a double significance; firstly, physiological Ideologues relying on the principle given to sensitivity which philosophically follows the Sensationalist epigram “from the moment we feel, we are aware of our existence.”⁴⁸⁸ In turn this equated processes of the intellect with the processes of life, and in which all sciences could ultimately be considered “branches of a single stem.” However, since sensibility was “the last end of the phenomena we call life,” what was apprehended by the idea-sign was an original difference appearing behind impressions informing about the organic source and nature of their causes. This was never understood as a simple relation and Cabanis reflected that it was “at least relative to ourselves, that is, relative to the general manner of feeling of human nature,” noting these cannot always be the same.⁴⁸⁹ Cabanis, therefore, took the doctrine of sensibility as informing both specific local phenomena experienced of life and the general concept of living nature; both followed a historical development. Secondly, a gap between what is physiologically observed and its subsequent philosophical analysis could become progressively filled if both the source of ideas and observed vital movements, which emerge from this same source, could be maintained according to the method of a ‘true science.’ It is this

⁴⁸⁶ Cabanis (1956) Vol.1 p118-120, 361, cf Staum p177

⁴⁸⁷ *Rapports* Cabanis (1843)Préface p46-48

⁴⁸⁸ *Ibid*, Memoire 1:3

⁴⁸⁹ *Ibid*, Memoire 1:3

science that needed balance. However, since rational philosophy fell short and physiology was as yet provisional, Cabanis' task for the future science was to bridge this gap and uphold as twin positions the rational and physiological. To do this Cabanis conceptually conflated what others observed as differences; irritabilities became the consequence of general sensibility, and vital activity the consequences of life. While this may seem like an intellectual 'slight of hand,' it is worth emphasizing what Cabanis was aiming to mediate: between internal and external impressions on the one hand, and moral ideas and inclinations on the other, was the drive to a more positive knowledge of human life. This ambition related the monism of the individual to an image of man in general.⁴⁹⁰

This future science was the vision behind De Tracy's address to the Institute in 1802. It stood as a general judgment passed on the prejudices of old schools-based doctrines, while he saw German philosophy as also retaining the old doctrines since they did not practice the new techniques of the French model. This should be understood to mean not regarding the human mind as an abstract thing, but taken for an evaluation that distinguished itself by progressive practices to be refined around the differential methods derived from calculus and a conjectural origin of languages and the idea-sign.⁴⁹¹

Cabanis: *Rapports* and the Future Science

The broad picture of this Science of Man was presented by Cabanis in the first volumes of *Rapports du physique et du morale de l'homme* in 1796 before the 'Classe des Sciences Morales et Politiques.' It stood as his contribution to the wider analysis of physical and mental experience in its relation to acquired temperaments although covering much of the same ground as earlier Philosophes. But Cabanis had a different relation to the philosophical and medical traditions through an interdisciplinary approach drawing on the wave of scientific development around the revolutionary period (Pinel, Lavoisier, Volta, Malpighi, Bichat, Lamarck). More than the Enlightenment Philosophes, Cabanis could be encouraged in what future disciplines could offer a Science of Man. Despite an awareness of the contemporary limitations in anatomical research

⁴⁹⁰ Ibid, Memoire 2:2-3,

⁴⁹¹ Discussion of the Ideologue movement in the important text by Picavet (1891) pp. 347 ff

looking to deeper accounts of physiological principles, the elements now being theorised methodically through the physiological unknown of vitalism retained certain possibilities for the emerging sciences.⁴⁹²

Cabanis was not alone in holding with this form of vitalism that extended as a principle of law behind forms of natural measure. But he held a physiological unknown as the new technical approach by which the ‘strange inverted Newtonism’ could distinguish itself from general historical principles attributed to an unfolding sequence of phenomena in the body. Attractions, directly determined in the laws of the primary combination, became the mediate cause of “the sequence of subsequent phenomena proper to each circumstance:” this grounded a domain to be developed around what the Sensationalist method looked to differentiate in bodies in general. The ambition was to differentiate stages of organization through the limits of knowledge, although these limits were themselves shifting within the new sciences. Cabanis’ was a question of possibility, -

“will the other attractions be explained by sensitivity or will the sensitivity and the intermediaries between the two terms explain gravity?...by the present state of our knowledge it is impossible to foresee...but a possibility for future experiment and research.”⁴⁹³

In the observations of Harvey, Malpighi, Haller, Cabanis looked for analogy between animal sensibility, instincts, affinities of simple attractions such as gravity, exerted between all parts of matter. In three orders of phenomena; variable laws, states of elements and circumstances under which they interface, were the possibilities of explanation that appeared through discovering properties manifest of different combinations. What remained for a future positive physiological knowledge was to ultimately ‘lift the veil’ covering the mystery of sensitivity.⁴⁹⁴

One must consider the context for the Hippocratically inspired medical writer from the perspective of the significant conceptual shift that occurring around the meaning of the term ‘animate’ as it occurred in the late 18th century.⁴⁹⁵ This overlapped with the term ‘organic’ and

⁴⁹² Following contemporary scientific debates such as over affinity in the ‘new chemistry’

⁴⁹³ Cabanis (1843) *Memoire* 10 2nd sect ptIII. Trans. Saidi (1981) p542

⁴⁹⁴ *Rapports* Cabanis (1956) Vol. 1 p293, cf Staum (1980) p178, p180

⁴⁹⁵ Outlined in Cunningham (2002) p58

indicated a vital status that contrasted with the inert. In discussions on life, this meant what was evident behind the goal oriented activities in the organised body. Such organic activities were understood around the complex functioning of the inter-relationship of material parts into which was brought conceptual discussions on the nature of life indicated by the relations of organs serving a soul. In this context, the concern with organisation and its properties, substituted for discussions of an organising element itself.⁴⁹⁶ The nature of ‘organisation,’ which was the central aspect of the physiological debate, was an explanation given through a concept attributed to general properties of life. But in this era, organic phenomena were also being localised in the body. This followed a distinction between ‘unorganised bodies,’ mere ‘aggregates’ of chemical elements and dead matter - which, while governed by the law of affinity (as Lavoisier had shown) which stood in contrast to ‘organised bodies.’ The latter were conceived as governed by unknown laws of the whole while delimiting living properties in the face of the unknown was a limit against which Condillac’s Sensationalist methodology was retained. But when *Rapports* took these organic properties as “a general fact of living nature” and sensitivity “the ultimate term one arrives at when studying ‘vital’ phenomena,”⁴⁹⁷ Cabanis was looking beyond Condillac’s idea of sensitivity to develop the “analysis of intellectual faculties and affections of the soul.”⁴⁹⁸ The assertion was that Condillac had touched on an idea of instinctive determinations which could now be systemised through physiological facts. Yet, one must assume that Cabanis was aware of the central physiological difficulty of taking the observational method inherited from the philosophically oriented Montpellier medicine.

Condillac did not develop this as a physiological principle and the sensation that informed *Essay on the Origins of Human Knowledge* depended on a principle of relation between ‘language of action’ and intellectual ideas; - “all that pertains to the human understanding is reduced to a single principle.”⁴⁹⁹ This principle rested on the argument for the origin and progress of language as a process to explain the social interrelation developed over time by a repetition of the formation of habits. This philosophical problem Condillac had found in Locke’s essay as the problem of treating ideas as preceding relations to words when following a strict Cartesian

⁴⁹⁶ Ibid p58, also Duchesneau (1982)

⁴⁹⁷ *Rapports* Cabanis (1956) Vol. 1 p198, cf Staum (1980) p177

⁴⁹⁸ *Rapports* Cabanis (1843) p46, see appendix 3

⁴⁹⁹ Condillac (2001) 4.§27

method; he then went on to imply that words took an active role in forming ideas.⁵⁰⁰ Because Locke, like Descartes, held understanding as the private endowment to be expressed in words, what Condillac intended was to see understanding and knowledge as more socially conditioned, with emotion and passion as necessary residual accessories to such communication.⁵⁰¹ These were irreducible ‘accessory ideas’ evident in voice, facial expressions, gestures, and were the natural signs that inform the core problem for Condillac’s thought. He addressed these in consecutive texts and sums up the problem as follows, -

“my entire system comes down to this matter; social intercourse gives occasion (1) to change the natural cries into signs; (2) to invent other signs which we call arbitrary, and that these signs (both the natural and the arbitrary) are the first principles of development and progress of the development of the mind”⁵⁰²

Idea-signs intended to explain invention and transformation of a second nature, while avoiding explanations of mental life as speculation about what goes on in the mind of the isolated individual. As has been shown above, the heart of Condillac’s work lies in the *Essay*, preceding *Treatise on Sensation and Logic*, which follows an anti-Cartesian notion of the sign as generated within, and as a result of, a wider social integration given to the conceptual practice attributed to human life.

For Cabanis, the physiological extension of this argument unfolded through an unknown particularity ascribed to a concept of life in general. This concept held as significant the aspect made evident as the physical-moral link to socio-political life. But the ambiguity of the future physiological synthesis was the ambition for discovery of the localised element whose specificity informed his ambitions for a Science of Man.-

“Physical sensibility is the last term at which we arrive in the study of the phenomena of life and in the methodical work of their real limit. It is also the last result, or seen differently, the general principle which furnishes the intellectual faculties of the soul. As such the physical and the moral are confounded at their source, or, the moral is nothing

⁵⁰⁰ Locke treats ideas in Book 2 as ‘words and language in general’ in Book 3 “it is the name that seems to preserve those essences, and give them lasting duration” Locke (1975) 3.5.10.

⁵⁰¹ Aarsleff discusses how this had been previously implied in the Port Royal *Logic* (1662). See Aarsleff’s intro to Condillac (2001) p xix

⁵⁰² Condillac cf Aarsleff in Condillac (2001) p xxviii

but the physical considered from another point of view. This proposition demands to be developed.”⁵⁰³

Cabanis proposition was that a physiological concept upheld the possible determinations of an economy of the body, but whose widest perspective was also a psycho-physical idea of life. This was an ambiguity that looked to a reciprocity between animal sensibility, evident organisation in the instincts, and the elective affinities of chemistry as simple as the attraction of gravity as the properties of matter which, in this era, followed possibilities that appeared more definite with new anatomical observations.⁵⁰⁴

In *Rapports*, he categorised three orders of phenomena; i) The tendencies of affinity according to open and variable laws of the vital; ii) states given through the local elements and the circumstances in which they interface; and iii) new surplus properties that result from new and different combinations. Hence the perspective taken from Condillac’s *Essay* as the ‘language of action’ saw the notion of sensibility gain an enveloping concept appearing as an extended order. Cabanis delimited this unified monistic domain in which primordial elements displayed evident effects understood through a capacity for transformation. The speculative physiology offered this as a domain of conjectural knowledge of the body according to three orders of sensibility; i) external sense, ii) a corporeal sense, and iii) the internal sense. These orders constitute the material physical objects, the sensitive bodies and mental images, whose general domain describes the language of actions, the reactions and their latencies necessary in the order of life. It is a concept that explains the,-

“...activities of the memory or the imagination, whose original impressions belong to one organ, whereas determinations appear to react to it in passing, in order to direct themselves entirely towards another organ.”⁵⁰⁵

From original impressions, as the physical impressions whose sensibility is transformed through the idea-sign, the dynamic image of mental life could be mapped against a general sensibility. The concept of the body therefore contained the differential relations as centres of activity whose potential was of coordination through the ‘centre of reaction.’ From this Cabanis can write, -

⁵⁰³ *Rapports* Cabanis (1843) Memoire 1:3

⁵⁰⁴ “which follow Harvey, Malpighi, Haller, and some others” Ibid, Memoire 10, 2:3

⁵⁰⁵ Ibid, Memoire 11. Freud mentions Cabanis in this context notes Starobinski (2003) p158

“whether these impressions have been received by the external or internal sentient extremities or whether their cause has acted within the cerebral mass, they always end in the centre of reaction that reflects them, in tendencies, movements and functions in regard to the parts to which each of these generations are assigned. This action and reaction can often take place without individual having any consciousness of it.”⁵⁰⁶

This last sentence indicates the importance of the image of the body, rather than mind. Its general role is mediating action and reaction according to a mean. Cabanis uses physiological sensibility, like the language of action, to explain the circulation of an order of impressions, with their possible synthesis and transformation, into the organised concept of body. Perhaps Cabanis saw this objectivity as aiming at ‘an exhaustive totality,’ but the theory of sensitivity necessarily assumed a positive element for knowledge and its method of analysis, and offered techniques capable of transformation into a positive concept.⁵⁰⁷ Despite this ‘rarification’ of the sign that carried its empirical reciprocity well beyond Condillac’s principle of the idea-sign, by following the physiological discipline Cabanis placed the concept of the body before any difficulty associated with a Cogito. In this way physiological ideology was poised between a historical concept of man as the rational animal, and the new element of the composite to be anatomically determined.⁵⁰⁸

The New Anatomy

The anatomically determined body was recognized as extending medical knowledge to present a local perspective on the physiological concept of body. This was what Cabanis understood of physical anatomical description giving “the basis and ground-work for all physiological illustrations, the necessary branch of the science of animal economy.”⁵⁰⁹ In the context of the future science, at the end of the 18th century anatomy was allied to the expanding practical discipline of surgery developed as the active discipline for giving the account of the body and informing physiology’s discussions on life. A complete physiology followed a complex

⁵⁰⁶ Ibid Memoire 11

⁵⁰⁷ According to Foucault it is confused because it is a tradition in opposition to the mathematical knowledge. Foucault (1975) p103, p116

⁵⁰⁸ Foucault notes how Cabanis carries over a certain humanist tradition in a new positive guise. Foucault (1975) p118-121

⁵⁰⁹ Cabanis (1806) p290

functionings of an inter-relationship of parts which gave the conceptual description of the living body. This ‘exhaustive totality’ of function still deferred, for historical reasons, to the physiologist to explain both the ‘sub-visible’ constitution of organic matter and the means by which the soul carried out its actions through the body as a whole. But significant developments in the ‘art’ of anatomy during this era meant that physicians were looking to “new light thrown upon the animal economy:”⁵¹⁰ anatomy was the active discipline for apprehending the new material knowledge of the body.

This is exemplified by William Harvey and his discovery of the circulation of the blood. With important implications for a wider, more philosophically oriented, physiological theory, it was strong experimental evidence that indicated to Harvey that all knowledge originated as ‘events of the senses.’⁵¹¹ To examine meant, “you must bring them to the senses and confirm them by judgment of the senses.”⁵¹² In this way Harvey distinguishes a modern practice through the event of the experiment and its integration into a physiological schema of explanation and set a precedent for the anatomically oriented work that followed. Albrecht von Haller, for example, whose *Dissertation on the Sensible and the Irritable Parts of the Animals* (1755) preceded his *Elements of Physiology* (1757-1766), fore-grounded an experimental practice prior to unfolding his physiology. This was in contrast to Georg Ernst Stahl, so influential for the Montpellier physicians, for whom the ‘good physiologist’ meant understanding the limits of relation between the anatomical practice and the aims of the physiological discipline.⁵¹³

During the 1780’s, anatomical practices was extending itself through new techniques of surgery.⁵¹⁴ There remained, however, a division between producing anatomical data and unfolding the physiological interpretation of the functions of the soul; this was not yet an

⁵¹⁰ Ibid p152

⁵¹¹ Andreas Vesalius *De Humani Corporis Fabrica Libri VII* (1543) marked the beginning, but William Harvey exemplified a confidence in anatomical experiment for gaining new empirical data of the body. Cunningham (2002) p55

⁵¹² Harvey (1653) p178, experientia in Latin gives experience and experiment as two aspects of an “event of the senses” cf Cunningham (2002)p62

⁵¹³ Haller wrote of the Stahlians that they “always have an aversion to anatomy” Haller (1755) p693, cf Cunningham (2002)p67.

⁵¹⁴ Galvani would be the example of anatomical experiments that introduced electricity to what physiologists called nervous fluid or animal spirit to account for muscular movement. Galvani *De Viribus Electricitatis in Motu Musculorum Commentarius* (1791)

experimental physiology in any contemporary sense. Since the principle object of this physiology was a systematic view over the different functions of the body which could be called ‘natural,’ which for Cabanis meant the one “best adapted to the association of our ideas,”⁵¹⁵ this followed the observational method proceeding by degrees from the known to the unknown. Cabanis’ Science of Man was grounded in a concept of the human constitution to which a rational physiology elaborated the relation of our “ideas, our passions, our virtues and our vices.”⁵¹⁶ Such was its concept handed down through the older universities based physiology, as the disciplines higher calling traditionally associated with the mysteries of the soul. However, at the turn of the 19th century, this physiological overview of its function confronted new practices in the hospital theaters where surgeons dissecting bodies brought anatomical data together deducing function by a process of syllogistic reasoning to give new perspectives on the natural account of man. Often these were in conflict with accounts traditionally associated with the university based physiological knowledge. An ensuing confrontation appeared around what reasoning could be attributed to the ‘natural,’ which had been philosophically taken up under the higher task. This was understood even by the more anatomically oriented physiologists of the era, such as Xavier Bichat.

Xavier Bichat arrived at Paris in July 1794 to follow a course at the hospice Hôtel-Dieu.⁵¹⁷ There Pierre Joseph Desault ran a surgical clinic aimed at producing practicing surgeons by immersion in clinical observation and through daily exposure to surgical techniques. This practice had developed through the 18th century and was carried over virtually unchanged in the new post-revolutionary era of the Ecole de Santé.⁵¹⁸ Desault died unexpectedly in 1795 but within a few years Bichat himself was holding courses in anatomy, surgery and physiology, expanding his own ideas beyond those of Desault. Bichat was also a fellow of the Société Médicale d’Emulation and was following similar themes to Cabanis and appears to have shared the ambitions for a Science of Man. In an early outline for his physiology, *Discourse sur l’étude de physiologique* (1799) he describes both a historical and a practical approach; since the “ancients knew only how to observe,” he upheld the Hippocratic legacy of an observational physiology

⁵¹⁵ Cabanis (1806) chp. 4 sect 1, 2, 3 (p303)

⁵¹⁶ Ibid chp. 4 sect 1, 2, 3 (p304)

⁵¹⁷ Pierre Joseph Desault 1744–1795

⁵¹⁸ This is the claim of John E. Lesch (1984) p54.

while following modern methods of amassing data needed to establish the new language of physiology.⁵¹⁹ In this respect, Bichat was influenced both by the philosophical approach of the Montpellier physicians and its neo-Hippocratic tradition, but also by Haller's approach of developing an effective anatomical practice to give the practical perspective that ancient medicine lacked.⁵²⁰

Bichat's physiology aimed at a synthesis directed at overcoming a specific problem. In Bichat's opinion, Haller's experimentation had certain advantages for the study of particular functions of the body, such as digestion, respiration, secretions etc, if certain precautions could be upheld.⁵²¹ These precautions followed from what the Montpellier doctrine took as the limits of what an anatomically informed physiology could offer to a sensible doctrine of the body. It was a limit based on the idea that experimentation on live animals could never give a 'natural' impression since it induced fear and stress which distorted observed results and rendering invalid its evaluation for a general physiology. Bichat saw this as the interpretive difficulty associated with the 'natural' state. It necessitated a third perspective as aid to delimit natural knowledge and this was the observation of the diseased state. However, this strategy introduced a further problem for the ambition of a modern medicine; as ancient medicine formulated its general pathology through the humoral doctrine, a task remained for modern medicine to develop its anatomical study of diseases to its advantage. Therefore, the third perspective meant Bichat also took up the task of separating out, on a simple anatomical basis, the modern analytic that informed evident limits of 'organic disturbance,' from the complex historical admixture of 'general fevers.'⁵²²

Xavier Bichat and a Rational Physiology

The anatomical basis informed an organic ground delimiting comparative structures and serving the ambition of Bichat's method to extend observational practices to phenomena of the higher

⁵¹⁹ Bichat *Discourse sur l'étude de physiologique* (1799) References to the Discourse relate to the reprint in the Appendix to William Randall Albury (1977) p97

⁵²⁰ Bichat *Discourse* notes Harvey's discovery of the circulation as the exemplary modern medical event. Cf Albury (1977) p97-98

⁵²¹ Ibid p97-98

⁵²² Ibid p99

and more complex level of the animal economy. The complex levels were reserved for the physiological discipline in its role of physiologist-metaphysician and this followed the rational discourse on sensibilities in its extension linked to the ideological project, -

“...I showed the foundations on which physiology must be based and from which the history of the phenomena, or observational physiology, must be drawn. But the phenomena must be coordinated, their totality must be sought out. The mind of man, naturally curious seeks, causes thus rational physiology soon came into being.”⁵²³

Beyond the practical limits of observation, Bichat deferred to the physiological task connected with metaphysics; in his notes he wrote “speak here of Cabanis.” The practical limit related to methodical difficulties of apprehending observable natural impressions, while the physiological discipline was concerned with the problem of their variable composition which Bichat retained. In the physiological sense, the necessity of a perspective on the physical and the moral could form a rational physiological synthesis which could stand as a nature of man.⁵²⁴

This was the early program of the *Discourse*, which saw Bichat promote the broad values of the physiology of his day, namely an awareness that it supplements a general Science of Man at the avant-garde of what could constitute a modern knowledge. The historical knowledge was being encroached upon both by modern physico-chemical sciences and natural history; Bichat understood this as grounded in the Newtonian revolution, who had added the “crowning touch” to what was considered secure science. The stated task was to “examine the degree to which these sciences can advance the Science of Man,” that meant bringing elements together into the new concept within the tradition that could extend itself to a Science of Man.⁵²⁵

Grounding the doctrine of sensibility was taken up in his early work on synovial membranes. Bichat delimited and localised anatomical features through observing the inflammation of fluids contained within the synovial membranes. This was developed as visible evidence for an elementary theory that could demonstrate a natural unity of particular tissues in themselves.⁵²⁶

⁵²³ Ibid p100

⁵²⁴ Ibid p100

⁵²⁵ Ibid p102

⁵²⁶ See Rey (1991). Phillipe Pinel described the association of pathological phenomena in observable membranes in his *Nosographie philosophique* (1794) and Bichat followed his lead.

The method described in *Traité des membranes* (1800) gave a classificatory schema for the observational analysis as the modern technique superseding less sophisticated techniques of tissue analysis, namely physical methods such as boiling, distilling, desiccation etc. Bichat developed the method by which elements could become visible through observation of a natural inflammation as it spread first through the tissues before advancing to affect organs then to the whole: the ‘natural’ method of division of organism into its parts, uncovered ‘hidden’ operations by which its nature could subsequently be revealed.

This organic level informed from *Traité des Membranes* (1800) was a theoretical base later expanded to the influential text *Anatomie générale* (1801). It took the regional method as the axiomatic for its ambition of the scientific approach to organic laws as advancing on the historical limits of physiology.⁵²⁷ The philosophical method of analysis had scientific credentials as demonstrated in Lavoisier’s chemistry and by following Condillac’s analytic the idea-sign gave a central concern to the ‘natural’ necessity by which the observed organic properties in the tissues could give the analogically delimited space for grounding the physiological synthesis. He did this with some caution, noting an, -

“...essential differences between the physics and physiological laws....physics is constant, vital properties are at every instant undergoing some change in degree and in kind...baffle all calculation and would require as many formulae as cases which occur...in their phenomena nothing can be foreseen, foretold or calculated, we judge only of them by their analogies and these are in the vast proportion of instances extremely uncertain.”⁵²⁸

The sign therefore functioned to delimit an ordered space only to the extent that it ‘spoke’ the new organic language. The rational synthesis was reflected as a physiological discourse which appears in the first section of *Reserche physiologique sur la vie et la mort* (1801). Bichat separated out different hierarchical levels of complex organisation, around degrees of certainty, the demarcation that mirrors the relation between the investigating anatomist and the synthesizing physiologist at the confluence of two hierarchical disciplines. This intersection gives physiological discourse its organic structures, considered in their simple organic functions;

⁵²⁷ This has a relation to those of Lavoisier’s chemistry described in *Traité élémentaire de chimie* (1789), and has a common epistemology with Condillac’s *Logic*.

⁵²⁸ Ibid Section 3 “characteristic marks of vital properties compared with those of the physical properties.”

while on another level it followed the recomposition that aimed at rationalising higher animal functions.

The Organic and the Critical: The Homoeomerous Parts and Bichat's Tissue theory

The organic ground of Bichat's tissues was in principle similar to Aristotle's 'homoeomerous' parts, standing as constituent units of the body. Aristotle's common substratum was a 'matter' transformed under the 'power of heating.'⁵²⁹ This power could induce material bodies to interact through their inherent qualities to form a third substance, "flesh, bone and the like."⁵³⁰ The composite was therefore held together under a physiological principle that accounted for a process of becoming a 'mean.' This principle grounded the unity of the homoeomerous parts, and in turn, combined to give the organs (non-homoeomerous) parts and finally the organisational harmony in the body displayed in the higher phenomena of life.

Bichat's tissue theory was therefore, not the neutral anatomical description, but a 'taxonomy of vital properties,' where distinct properties functioned with an ontological sense of genesis behind the structural relations of higher phenomena.⁵³¹ In this respect, Bichat's 'tissue' drew upon the Latin word 'tela' (a web) referring to areolar or connective tissue running between many organs of the body. This already carried the historically value appearing to Galen as "fibre branches finer than spiders webs,"⁵³² and to Vesalius's *De humanicorporis fabrica* as its woven "fabrica." When Francis Glisson was scraping tissue away from the liver in 1664 he described a 'feltwork' of fibres, the cellular tissue read as a structural material by which the whole body appeared to be connected.⁵³³ In the original *Encyclopedie* (1751) the notion of the fabric of the body was

⁵²⁹ In his biological works, Aristotle warns against a one sided view which takes into account only a material aspect in the discourse on method and causes; the start of *De Partibus Animalium* ch 1, 639a.

⁵³⁰ Aristotle *De Generatione et Corruptione* 334b23-26 cf Tracy (1969)p171, p174

⁵³¹ Open to a 'qualitative mathesis' see Foucault (1970) p74

⁵³² Singer (1956) p63

⁵³³ This account of Glisson from *De Hepate* (1664) given in J. Walter Wilson (1944) pp. 168-173.

understood as ‘tissu cellulaire,’ the system of fibres that implied a ‘structure,’⁵³⁴ a basic constituent component of a human body.⁵³⁵

The significance for Bichat’s physiology came from the parallel to the cell as described by Robert Hooke in *Micrographia* (1665). This related minute structures of plants, later found by Marcello Malpighi to be universally present in botany, where the cell signified a fundamental unit, perhaps common to animals and plants.⁵³⁶ The membranes formed fundamental elements of ‘animal fabric’ running throughout the whole, were paralleled with this unity prior to differentiation into organs. But it was the precise nature of the cellular tissue became the subject of controversy. Towards the ends of the 18th century, Théophile Bordeu, the Montpellier physician, looked to tissue as the “first materials” of the embryo which gave the substratum from which all other materials are derived. But, for Bordeu, it was less elemental tissue that was important, but rather that this contained the particular internal ‘environment’ as the continuity in the midst of which all the organs were immersed. Organs were evidently insulated from each other, giving the autonomy “thus ensuring an existence peculiar to itself.”⁵³⁷ Bichat drew heavily on this essential autonomy of the parts in *Anatomie Générale* and described fibrous nature of cellular tissue as,-

“placed around the organs, the different parts of this system which act at the same time as a bond to connect, and as an intermediate body to separate them. Carried into the interior of these same organs, they essentially contribute to their structure”⁵³⁸

Here was the interface between environment and the ‘existence peculiar to itself,’ as it extended through the organs. Tissues were fundamental to living structure and had the significance for Enlightenment physiology as the basis for organic laws; these were fundamental in an ontological sense, -

⁵³⁴ See Forrester (1994) pp444-458.

⁵³⁵ *Encyclopedie*, 1751, vol. 2, p. 807 cf John M. Forrester (1994) pp444-458.

⁵³⁶ Von Haller, by the mid 18th century, could observe of tissue that “cellular structure made up of an infinite number of little plates or scales which by their various directions intercept small cells and weblike spaces; and join together all parts of the human body in such a manner as not only to sustain but to allow them a free and ample motion at the same time.” *Elementa physiologiae corporis humani*, Albert von Haller, (1776) (Introduction is dated 1757 at Berne) cf Forrester (1994) p453

⁵³⁷ Bordeu *Recherches sur le tissu muqueux* (1767) cf Wilson (1944) p170.

⁵³⁸ Bichat *Anatomie Générale* cf Wilson (1944) p170

“...the mechanisms by which the parenchyma of nutrition appropriate to themselves nutritive substances is not an insulated phenomena...but a consequence of general laws of the organic.”⁵³⁹

This primitive undifferentiated material offers to every part a common and a uniform base, as the ‘matter’ susceptible to transformative development of a generative system. Open spaces of cellular tissue, grounded ‘simple functional folds’ by which organs appear to extend into the three dimensional structures of the body.⁵⁴⁰

On this organic level, tissues marked the material limit to anatomy but did not limit physiological discourse. The rationalising discourse of *Anatomie Générale* took tissues as an interface and point of exchange where fluids were assimilated and transformed into the solid materials and equally becoming its residues. -

“There are thus fluids corresponding to the composition, and others being used for the decomposition. The solids are the terms of the first which come from the outside, and the starting point of the seconds who go back there...All the phenomena of the living economy show us the fluids in an almost passive state, the solids on the contrary, always primarily active. In fact the solids receive the excitation and which react under the terms of this excitation. Everywhere, the fluids are only exciting them.”⁵⁴¹

Because tissues are the seat of an action and reaction, they have a capacity to be active and vital in relation to the fluids, which are essentially passive. Such a differentiation leaves fluids constituting an undifferentiated substance with the tissue interface representing a new frontier between the limits of a biological vitalism and a positive physio-chemical science. The Enlightenment perspective understood undifferentiated force as standing beyond organised limit. “Chaos,” as Bichat wrote in *Anatomie générale*,-

“was only matter without properties; to create the universe, God endowed [all matter]...with gravity, elasticity and affinity...and to part he gave sensibility and contractility.”⁵⁴²

Properties were an active differentiation: fluids were passive but they were not inert, they were necessary for processes of life and activity of the tissues, as both the nutritive and the carriers of

⁵³⁹ Ibid p170.

⁵⁴⁰ Foucault noted the simple folds extending along a ‘third dimension,’ (1977) p128, p136-137

⁵⁴¹ Bichat (1801) p31-32,

⁵⁴² Ibid. See also T.S. Hall (1950) pp 6-27

foreign and harmful substances. Bichat mapped this frontier into a taxonomy of twenty one primary tissues for *Anatomie générale*, as the organic structural base. In turn these could sometimes appear as disease, hence retained the potential for pathological eruption.

Vital Force and the Idea-Sign in *Reserches Physiologiques*

The description of organic structural base attained its functional value as explanatory power for the medical practice approaching unknowable properties of the body. Following the Hippocratic notion of balance, or Aristotle's concept of the 'mean', the living economy needed to explain a phenomenal continuity under particular conditions. Here Bichat's vitalism retained its continuity with the Hippocratic medical legacy, grounding ontologically, immanent properties of living bodies such as a *vis medicatrix*, in the composite or 'blend' that Aristotelian physiology gave as a doctrine of the mean in explaining the concept of normal function.⁵⁴³ Extended to the body as the notion of an essence (ousia) of the faculties, this left a historical legacy as master strategy for explaining physiological function. The exhaustive decomposition of the sensible activities of the body prior to a recomposition, explained insensible activities, as vital movements in general.

What was specifically intended to be explained as vital movement differed during the development of medical thought. For example, when insensible micro-movements were attributed to a more fundamental property, the power such as a *vis medicatrix*, the latter stood as an interpretive tool for a dynamic explanation of a functioning whole. But, during the Renaissance, this notion was to be avoided as a general explanation of the body; for Jean Fernel, an ultimate unknown was to be displaced by a local knowledge of the body for the purposes of establishing the specific function of the parts.⁵⁴⁴ This legacy was taken up in iatromechanic medicine by displacing the notion of soul to a transcendent position, as an ultimate unknown and

⁵⁴³ Galen took these properties as an innate, a set of faculties (natural, vital, rational) extended as functions of life but, as T. S. Hall points out, elsewhere Galen sees health as depending upon both the blend of qualities constituting tissues (homoeomerous parts) and also configurations of these tissues in giving organs (anhomoeomerous parts). see T. S. Hall p9

⁵⁴⁴ Fernel wrote that this unknown was "exceedingly involved and obscure with whatever is not obvious, is not at all easily contained. It is a fugitive from sensation and our mind discerns it through the *functions* and work that brings it forth. Similarly we are want to discover all hidden causes whatever namely, by those of their effects that are conspicuous and that present themselves to sensation" *The Natural Parts of Medicine* (1542) cf T. S. Hall p10

the last term displaced from the analytic series and substituted for localised and explicable repetitious mechanisms observable in life.⁵⁴⁵ On the other hand, Francis Glisson focused on the ‘matter of life,’ where irritability was the property visibly localised in fibres of the body and implied an immanent property latent in the organic matter itself. Such a property could explain micro-motions which also held the energetic reserve attributed to the evident differences in bodies that gave them a predispositions for change. An ontologically primal matter maintained the fundamental status between a physics and a physiology, where active and reactive properties should account for a latency of function in the faculties (*biouisia* or *biarchia*). It served strategically to explain the disposition in the faculties for absorbing micro-movement into an economy of the body as irritability or sensibility which then expressed evident differences under a general concept of life.

The Sensationalist strategy of reducing the world to elemental properties, saw Cabanis retain this property as internally ‘confounded at the source.’ But Bichat grounded the ‘properties of living matter’ in his tissue theory while retaining a power to explain life’s phenomenal capacity, now given as an index of its latent force, to be rationalised in *Recherches physiologique sur la vie et la mort* as the measure of life,-⁵⁴⁶

“The measure of life in general is the difference which exists between the effort of exterior power, and that of exterior resistance. The excess of the former is an indication of its weakness; the predominance of the later an index of its force.”⁵⁴⁷

A concept of living force subordinate to exterior resistance comes in the wake of the epistemological success of Newton’s *Principia* and what was originally intended to displace ontological questions from their occult qualities for a more scientific one. In this context what presented itself as the ‘sum of forces’ of the body, was a ‘strategy’ for accounting for existing forces universally observable in all bodies, to which a natural and distinct language could be developed by the modern physiology. Therefore the idea-sign was now serving the progressive and positive stage of attributing relations to evident reactive properties of organisms in general, which, despite limited data, followed a necessary synthesis driven by the practical ideas of a

⁵⁴⁵ A strategy which follows Canguilhem’s maxim, “to act it is necessary to localise.” This gave his distinctions between an ontological and a dynamic medicine in Canguilhem (1989) p39-43.

⁵⁴⁶ Stahl also offered the image of an eminently corruptible body. see Haigh (1984) p100

⁵⁴⁷ Bichat (1827b) p11

medicine. The rationale was in giving the provisional groundwork that did not exclude the promise of future explication as long as it could retain its necessary intensions in what was implemented.⁵⁴⁸

This a comprehensive synthesis for rational physiology proposed in the *Discourse* appears in the first part of *Reserches physiologiques sur la vie et la Mort* (1800). Here Bichat described two distinct lives of the body brought together from a broad doctrine of tissue properties as a localisation of vital properties extended from anatomical structures through the rational physiology synthesis. Vital properties give the potential for a reaction to the physical world; the historical terms of sensibility and contractility have an importance within this totality of relating forces, latent or explicit, to the rational account of a phenomenal life unfolding over time. A force in general is retained as the index of a vital presence in the whole.

The physiological concept of human life distributed this as a presence between organic and animal levels. Simple internal parts showed evident practical functions and gave,-

“habitual succession of assimilation and excretion...*it lives within itself*, transforms into its proper substance the particles of other bodies, and afterwards rejects them when they have become heterogeneous to its nature”⁵⁴⁹

This gave a groundwork for the complex higher animal life that related to an explanation of the whole at different levels of its existence. On a higher level the animal, -

“*lives externally*, is an inhabitant of the world...feels, perceives, reflects on its sensations, moves according to their influence, and frequently enabled to communicate by its voice, desires and its fears, it’s pleasures and pains.”⁵⁵⁰

Hence a primary dualism between organic and animal explained, firstly the internal, continuous ground of basic associative or dissociative processes of body functions in composing structure. Secondly, the intermittent and externally oriented activities that extend progressively beyond organs as affective habits, and develop at the level of the body as a whole. The body integrates the organic function into the dynamic bonds between the vital organs; brain, lungs and heart;

⁵⁴⁸ Bichat wrote “let us pay homage to Newton [...] he was the first to discover the secrets of the creator, viz a simplicity of cause reconciled with a multiplicity of effects.” Bichat (1827b) intro, Foucault (1970) p70

⁵⁴⁹ Bichat (1827b) p13

⁵⁵⁰ Ibid p13

these constitute “the three centres, in which are terminated all the secondary phenomena of the two lives.”⁵⁵¹ The dynamic whole expresses the relation in its essential and necessary vital function that is mediating contrasting activities of animal and organic lives.

From the dynamic view follows the classical distinction between a life of the soul and a vegetable life, a high and low in the physiological structure. But the body’s direct relation to an external physical world (milieu) is tempered by a double dynamic whose tension is between animal life and organic life; as an account of the will and passion, this puts organic needs under a ‘natural’ relation to a ‘mean.’ The internal dynamic works against an immersion in the external milieu that exposes the organism as a whole to the conditions of existence.⁵⁵² Bichat explains physiological variability through an increased habituation of certain ‘organic’ functions against the relaxing of ‘animal’ functions, or vice versa, accounting for differences in individuated bodies, both from each other, and for its changes over time, evident in a capacity to materially redistribute vitality organically. -

“there is a superabundance of life in the child; in the child the reaction of the system is superior to the action, which is made upon it from without. In the adult, action and reaction are in balance; the turgescence of life is gone. In the old man, the reaction of the inward principle is lessened, the action from without remaining unaltered; it is then that life languishes, and insensibly advances towards its natural term, which ensues when all proportion ceases.”⁵⁵³

The explanatory benefit in this tension between the two systems is to displace a Cartesian mind/body dualism for a composite of active and reactive forces distributed between the lives within the body. Rather than an internal/external division, it means Bichat distinguishes the body’s activity from any simple monism, while retaining the classical image of three centres, the lungs, brain and heart, with the physiological interiority now radically separated from an exteriority of purely physical conditions.

The term vital can now be seen to relate on the organic level to a constitutive idea in the seats of the properties, but on the animal level it explains the “triple focus” which historical

⁵⁵¹ Ibid p176

⁵⁵² “a nice symmetrical construction” Starobinski (2003) p130

⁵⁵³ Bichat (1827b) p11

configurations attributed to a living mean. In *Recherches physiologique* the vital as mean was a theory behind what is observed in the symmetry of organs of animal life, its pairs of lobes, or organs divided along a meridian, by which Bichat “supposes a perfect balance of forces and action,” between their similar parts as visual aspect of the higher ideal order followed by the body,-

“...harmony is the character of the animal, discordance that of the organic functions.”⁵⁵⁴

However, vital organic function also marked the absolute limit between living and dead matter. Yet organic function remained distributed throughout the body as the ground which could never be interrupted. It explains what animal life, under cerebral effects for regulating the economy of force, had to bring under a ‘mean’ by its disciplinary efforts of habituation. The process of reducing pleasure or pain over time was allied to the physiological doctrine which was to improve disciplined judgement.⁵⁵⁵ From this perspective, a second dynamic appears from an interior organic perspective, “the seat of the inward tract,” where elementary natures of the tissues and mucous membranes are the seat of an irritability. The organic perspective reacts to “bodies foreign to our nature,” as stimulations to an organic life produces effects needing to be subordinated or assimilated by the animal life.⁵⁵⁶ However the inward tract or ‘passionate’ organic life can also intervenes in a way antagonistic into the animal life in its subordination to the brain. This oppositions gave a picture of the animal life competing with an organic life for mastery of the higher moral domain.

Finally, such the concept of the body accommodates the division of formal versus the expressive by describing temperamental habituations as relations of brain, of muscles and senses. The effort of the will needs to practice its capacity for modification of the body and its possibilities of specialisation or improvement in function. This is the vital capacity that is retained by the necessity for balance from the broader perspective which Cabanis schema absorbed as evidence of imbalances, not entirely “natural” in the secondary effects of socialised habits. Modern society “calls forth” certain new functions as a result of the “state of civilisation;” these are actualised

⁵⁵⁴ Ibid p25

⁵⁵⁵ Ibid p49

⁵⁵⁶ Ibid p53. followed by one of his more politically evocative passages:“The state of society is nothing but a more regular development, ...the exercise of the different functions of this life, for one of its greatest characteristics, consists in the capability of being unfolded.” p55

through habituations of the body, however any excessive discordance in basic organic functions would appear as fluctuations of vital power in the whole. ‘Excitations’ run through the body both as strengths or weakness, hence a constancy which animal life displays in the face of physical powers which “preside over exterior bodies” gives the concept of human life “allied at one time with the brute, at another time with spiritual nature.” Here was Bichat’s concept of the body as the modern conditions of life as the constant struggle for a mean.⁵⁵⁷

Conclusion

This chapter situated the legacy for a French Science of Man with the emerging medical sciences and explained how Condillac’s *Logic* defined the disciplinary practice that could further the ambitions of a rational physiology. This practice extended to an emerging Science of Man leading up to the revolutionary period. At the end of the 18th century, Xavier Bichat gave a new rational physiology its relation between living body and powers that preside over it. The new rational physiology served to constitute a French Science of Man and displace older doctrines by attributing intrinsic values both as positive and vital. This practice Bichat extended through the medical sign in the observation of disease to inform the limit of what could be considered natural physiological knowledge. This is the limit of a rational physiology which is the subject of the next chapter which looks at Bichat’s importance for French Positivism in the early 19th century.

⁵⁵⁷ Ibid p34-40

Chapter 4: Radical Positivism

Introduction

A Science of Man after the French Enlightenment looked to a rational physiology to account for life's capacity for organization and the last chapter showed how Xavier Bichat gave a paradigm for distinguishing vital beings from 'mere' objects. The sum of the function of resistance distinguished temporal biological beings but this also left *Reserches physiologique* with its central problem of establishing the nature and limit of its vital function and delimiting the higher manifestation of its capacity for organisation. Bichat retained a link to the legacy of Condillac's idea-sign in determining natural relations between an economy of life and the 'hidden operations of nature.' This chapter looks at how new biological concepts of life displace this physiological limit.

The last chapter also indicated that pathology was used to isolate an intermediary state between life and death which served to determine the dynamic image of the concept of life. In this context the idea-sign was not an analogue of life's forces, but the observational measure that serves the interpretation of the historical idea of life. It was an index to "the sum of functions by which death is resisted." It will be shown that this sign served Bichat with heuristic values of medicine, and not an apodictic science. Bichat attributed a psychological awareness of medicines practical relation to physiology. Bichat's method was therefore predicated on delimiting the historical idea of the vital rather than questioning representational values as Kant did.

In the ambition to rationalise physiology, pathological anatomy delimited the historical concept of life, but as an index to function. At the start of the 19th century an emerging Positivism retained the ambition for a Science of Man which will be clear through the works of Saint Simon. His 1813 text *Memoire sur la science de l'homme* explicitly states this through an understanding of Vicq D'Azyr, Cabanis, Bichat and Condorcet. But it no longer grounded in a concept of life as in the era of revolutions which lost its status in the early 19th century. The chapter shows therefore how Saint Simon looked to wider sources to mediate similar concerns

and that his Positivism retained certain values held of a socio-political discourse. But what becomes clear is that Saint Simon's primary concern after 1814 now becomes legitimated through the turn to 'industrial values'. Here is a marked shift away from grounding a Science of Man through physiology: what now becomes expressed as man's inner drives, of human will, and the struggle between modes of being, has now become a class struggle. Physiology's loss of a vitalistic base, and a shift to the paradigm of biological function in the early 19th century, saw Saint Simon turn to a 'concept of labour' to ground an excessive material force, something psychic that now necessitated a practical knowledge to uphold values that were identified with the older Science of Man.

This was a dilemma in the legacy left by Bichat's physiology for early 19th century debates surrounding the possibility of a Science of Man. Bichat could be criticised by Maine de Biran as introducing the psycho-physical parallelism that assumed natural function as positive knowledge of man. But the Positivism of Auguste Comte saw an epistemological project moving explicitly against philosophical defenders of an idea of man. The chapter explains in what sense a 'truly philosophical' revolution was ascribed to Bichat. *Cours de philosophie positive* contended this as constraining biological objects to regions 'proper to living bodies.' But Comte rejected Bichat's concept of life as the 'sum of functions that resist death,' and accepted a contemporary idea of biological existence premised on a function of integration. *Cours* has therefore a paradoxical relation to Bichat; he is exemplary in method but incomplete as a Positivism. What this shows that while Comte's Positivism stood against a regressive metaphysics, it substituted contemporary biological concepts to represent the differential order that gave the philosophical possibilities delimited by a modern knowledge. Comte 'mapped' vital concepts which demonstrates the extent to which structural thinking overtook his Positivism. Comte's subordinated the broader historical physiology to anatomical studies of his era and the new biology. This served a critical epistemology but abandoned the pathological perspective in driving the ambitions for a socio-political Positivist project. It displaced an 18th century debate over the Science of Man while furthering the spirit of an idea.

Life and Death in the New Physiology

At the turn of the 19th century, Xavier Bichat's developmental histories between the two lives, an organic ground and the assemblage of 'animal' functions, offered a basis for expanding the new Science of Man in France. Life seen as a double series, opening a hierarchical relation between discord and order, to produce individuation of the body. This represented the transition from determinable physico-chemical laws to the temporal stability in the vital sphere; conversely higher functions truly begin when the senses are exercised. Although Bichat's physiology retained something of the Hippocratic image of life's power, it now represented the power to resist the disorder of physico-chemical forces threatening to overwhelm it. There are three consequences of this shift.

Firstly, from the early 1800's, Georg Stahl offered a perspective on death appearing as the reversion to a physico-chemical sphere and subject to laws of ordinary matter. Vital phenomena differentiated themselves from these laws and appeared exceptional rather than a fulfilment of the potential of nature. Bichat's concept of life distinguished this as an 'island of vitality;' the opening lines of *Reserches physiologique sur la vie et la mort* controversially formulated this as, "life consists of the sum of functions by which death is resisted."⁵⁵⁸ It was a distinction that retained something evident in life's capacity for organization, now pictured as the sum of functions to be maintained only for a limited time as the resistance against dispersion was ultimately only temporary. This sum of this function of resistance distinguished temporal biological beings from 'mere' objects, but left *Reserches physiologique* with its central problem of establishing the nature and limit of the vital function delimited as the higher manifestation of the capacity for organisation.⁵⁵⁹

The second half of *Reserches physiologiques sur la vie et la Mort* sets out to establish the thresholds and limit to this concept of the body; in turn, this needed the temporal concept of the organisational capacity that the awakening animal function must learn to coordinate. This was a

⁵⁵⁸ Bichat (1827b) translation of the 1822 edition of *Reserches physiologique sur la vie et la mort* with notes by Françoise Magendie. p10

⁵⁵⁹ Jacob (1993) p88-92

vital concept in the sense that it had potential to a correct balance, to progress by extending the organic life through the differentiation of functions characterised by natural capacities of the body, and to be maintained for maximum period until death. Then as the animal functions fade, imagination and memory dims and visible life retreats back to the organic ground, which continues for a time before also reverting to the laws of ordinary matter.⁵⁶⁰

Secondly, it was from observations of the ‘natural’ life that Bichat gave his rational physiology against these progressive ‘double’ deaths’ of organic and animal. Ultimately these delimit the dynamic relations between organs, and a natural economy of life that stood as ‘hidden operations of nature.’ In *Reserches physiologique* Bichat focussed on the intermediary states between life and death, as opening a new frontier for investigation of vital limits whose threshold was the immanent return of physico-chemical laws. These were the intermediary phenomena that could equally appear in the guise of the pathological and therefore overlap with the concept of a natural death. In reality, in this era, death from mere old age remained elusive; as Haller commented, “very many people were carried off before this time by disease.”⁵⁶¹ Bichat highlighted the lack in the concept of disease in its relation to the phenomena of dying,-

“very seldom can we depart from the known phenomena of the living animal, when we undertake to inquire into those which it exhibits in its dying moments; it would be necessary to know the intermediary state between health and disease....but where shall we find the physician who will assert from that actual data of his art, he understands in such an intermediary state, the profoundly hidden operations of nature?”⁵⁶²

As aid to observation of this intermediary state, the zone of differentiation between life and death, Bichat distinguished a new category of pathological phenomena. Distinct from the historical pathology, this was incommensurate with the general practice of the physiological discipline serving the historical task of theorising the natural way to thinking about the body. But the expanding anatomical practices implemented a shift through its investigations as to the status of pathological relations within a physiological domain. Since anatomy now underpinned the physiological discipline, the pathological view demanded a systematic localisation of diseases to be excluded from the ‘natural’ body. A modern pathological tradition also aimed to differentiate

⁵⁶⁰ Bichat (1827b) p168-169, see also p175

⁵⁶¹ Haller *First Lines of Physiology* vol II (1966, original 1786), p247 cf Albury (1977)

⁵⁶² Bichat (1827b) p174

itself from the historical concepts such as humoralisms, and its source for producing explanations of disease was the dissection of corpses. Bichat, who was grounded in tissue theory and surgical training, also took this as the basis from which to expand a new pathology as the perspective for advancing into this intermediary zone. Hence phenomena which were an admixture of life and death followed the extension that Greek medicine always “identified with their semiotics.”⁵⁶³

At the turn of the century Bichat was working to isolate a new phenomenal class of organic diseases, categorically distinguished from historical ‘diseases in general.’ Organic phenomena could localise external symptoms and be identified with internal lesions as revealed through post-mortem examinations. Bichat noted that before the 18th century medicine “very seldom had recourse to the post-mortem examination;” by contrast he identified post-mortem as *the* modern practice that could distinguish categories of dying, and by extension be related to natural modes of life.⁵⁶⁴ Bichat’s pathological anatomy distinguished three temporal forms of death; i) a sudden death (asphyxia, syncope, poisoning, etc), the subject of *Reserches physiologique*, ii) death from acute disease (pestilential, fever) covered by historical pathologies, and iii) a ‘third kind of death’ resulting from chronic organic disease. It was the latter which he identified with protracted deaths which appeared as reversing the order of natural death as described towards the end of the first part of *Recherches physiologique*. Chronic disease advances from discord in the organic order as the seat of morbid affections appearing as “tettors, syphilitic eruptions, and inflammatory pustules.”⁵⁶⁵ From the level of the tissues this expressed itself upwards against the organisational modes of life, the visible form of an undifferentiated external force. Hence the ambition of grounding a new systematic pathology followed from the form of future science whose extension lent itself to the study of animal functions in *Anatomie Générale*. Here Bichat had attributed originary phenomena of diseases as axiomatic for a new physiology in the ambiton to finally overcome the legacy of the past,

“We have I think reached an epoch where morbid anatomy is about to receive a new an unexpected impulse.....With the exception of certain types of fever and nevous affections, everything in pathology is in the reach and the grasp of this science. How

⁵⁶³ This is noted by Cabanis (1806) (*Coup d'oeil*) p317

⁵⁶⁴ Bichat (1827a) ‘Preliminary Discourse’. Reprinted in Caplan (1981) p167ff

⁵⁶⁵ Bichat (1827a) cf Caplan (1981) p171

idle and insignificant do we find the opinions of physicians, and many two high endowments and great repute, when we examine them not in their books but in the dead body.”⁵⁶⁶

This shows how the new category was intended to supplement an older pathological theory. Bichat’s study appeared posthumously as *Cours de d’anatomie pathologique* (1825) and this was compiled from lecture notes following the model of *Anatomie Générale*. By mirroring its method, starting from the seats of disease and moving towards higher animal pathology through a phenomenology of disease, this text appears to outline the controversial practice of the anatomo-clinical experience.⁵⁶⁷ This is the context in which Bichat has been seen to follow the practices of his epoch in aiming to contribute to the new positive order of classification by delimiting the historically vague notion of living being, along with others such as Jean Corvisart and Rene Lâennec.

Thirdly, it is this latter position which is complicated by the consideration of the values that were attributed to this pathological view. In this sense, Bichat retained something of the Hippocratic image of life’s power, as power to resist physico-chemical forces threatening to overwhelm it, and that a living economy looked to animal phenomena to distinguish its modes of existence. But on this level, it was accounted for by observed bonds existing between brain, lungs and heart, and this physiological concept took these dynamic relations as the terminus of the secondary phenomena of the two lives resolving into the historical triple focus which “physiologists have at all times been acquainted with.”⁵⁶⁸ From this perspective, what Bichat historically retained was a concept of normal variation not essentially different from an Aristotelian idea of μεσότης (or the mean). This was the state between extremes and seen as the limit of oscillations around a point. The mean is not fixed but indicates the normal degrees of variations by which distributed sensibilities can be maintained in a dynamical equilibrium. For Aristotle, the “genuine physicist” determines these limits by considering both the psychic and physical aspects of sensation or emotion.⁵⁶⁹ While the term μεσότης⁵⁷⁰ does not suggest simple mathematical abstraction, it does

⁵⁶⁶ Bichat *Anatomie Générale* sect 7. p38, cf Rey 529, see Appendix.

⁵⁶⁷ Depending on one’s view, this was either the basis of a modern medicine (Ackerknecht) or an intrusive clinician’s gaze. (Foucault)

⁵⁶⁸ Bichat (1827b) p176

⁵⁶⁹ See Tracy (1969) p200

indicate the dynamic equilibrium of opposing physical parts or powers which is informed or activated by a soul. From an objective perspective, the μεσότης is maintained by a virtual concept existing for an organised body, this serves to constitute the dynamic of 'health' in the animal. Both a physiology and a psychology refer to this dynamic aspect through the explanation of distinctive powers or sensibilities to which the body reacts or responds proportionately; either to particular stimuli or within general conditions of existence. Conversely, pathological variation points to excess or deficiency beyond this concept of the mean, indicating a threshold or limit beyond which its distortion produces a change in nature or a difference in kind. In an absolute sense, these are exclusive. Bichat reflected on a general pathology in his early *Discourse* as difference in kind,-

“...impossible to relate them [general diseases] to known laws of sensibility....they are all different, and are diversely modified in diverse parts and in diverse affections.”⁵⁷¹

But an attention to the dynamic threshold would reflect a fundamental relation between physical and physiological phenomena; a difference between a constancy and a normal variation that is echoed later in *Anatomie Générale*,-

“physics is constant, vital properties are at every instant undergoing some change in degree and in kind...(....)....we judge them only by their analogies and these are in the vast proportion of instances extremely uncertain.”⁵⁷²

Absolute forces of nature have a relation to the organic order conceived of as through the dynamical relation to the animal order, whose concept is the virtual sum of force. This virtual sum gives its vital limits by opposition to a physical concept of nature. And this distinction is made evident in differentiating a vital order, in its constancy, from the physico-chemical laws.

The new pathology starts at the organic level. It takes the sign of difference as indicating a physical constancy whose natural relation is to exterior forces. A threshold is observed in the fluids and solids as the practical limit of observation; fluids are understood to be more physical, more passive than the solids which are more active and dynamic in their resistance. The difficulty for an observational method was the practice of natural comparison which Bichat

⁵⁷⁰ While the 'mean' is strictly mathematical in Plato's *Timaeus* (32B, 43D) but also can also be any state between the two extremes notably discussed in Aristotle's *Nichomachean ethics* book 2 chapter 8.

⁵⁷¹ Bichat *Discourse* cf Albury (1977) p99

⁵⁷² Bichat (1812) Chapter 3

pursued by considering three perspectives; first was the observation attributed to vital properties (concept of sensibility), secondly pathological observation (concept of the pathology view), and thirdly the observation of dynamical ‘bonds’ or sympathies between organs of the body (the physiological concept of the body). It is the latter whose limits Bichat determined by animal experiments on the functional whole in the second part of *Reserches physiologiques sur la vie et la Mort*.⁵⁷³

Although *Anatomie Pathologique* grounded itself in the significance of alterations of bodily fluids and the inflammation of tissues, what is also significant is that Bichat urges caution in interpreting the status of such alterations because of the difficulties associated with the observation of different modes of life. These are the relative values that mark the historically distinct disciplines of the anatomist and the physiologist as a separation of observation and interpretation, -

“...The manner to proceed in autopsic examinations, must differ according to the different kinds of disease we have established; commonly it is prosecuted in an anatomical order, but it is not the best method to give precise ideas on the subject; in general diseases, it is a great deal better to follow the order of functions: in this manner we arrive at a knowledge of those which are injured.”⁵⁷⁴

Hence ‘precise ideas’ required of an empirical sense of measure are incommensurable with simple observation.⁵⁷⁵ The reason why Bichat is understood not to have used a microscope is for the simple fact that this was a technique understood as having inherent practical problems for interpretation. A pathological method also held difficulties for comparative analysis when looking for evidence of life’s capacity for organization at the level of the body.⁵⁷⁶ The interpretation of dynamic relations in observable anatomical elements of an organic body was where the idea-sign confronted a difference in kind and where the empiricists discipline must proceed with caution towards a physiological view.

⁵⁷³ Bichat *Discourse of Albury* (1977) p97

⁵⁷⁴ Bichat (1827a) Chapter 1: ‘Considerations of the post mortem examination’

⁵⁷⁵ Haigh (1984) p97

⁵⁷⁶ *Ibid* p97

In *The Birth of the Clinic*, Michel Foucault writes of how, removed from the interface of the tissues, extending temporal consideration of pathological phenomena through space becomes ever more complicated.⁵⁷⁷ This difficulty was attributed to the interpretation of Condillac's *Logic* as the analogical model amplifying the elemental doctrine of signs in confronting cerebral afflictions, convulsions, and mental maladies etc. These were diseases associated with function. The temptation of a pathological anatomy of organic elements was to reciprocally explain the sum of functions which resist death; but at this dynamic level, symptoms were distanced from intermediary states between health and disease. The claim is that *Anatomie Pathologique* inherited an ordinal value for the sign of life from the elemental tissue properties. When this informed *Anatomie Générale* these were attributed to a corpse rather than localising symptom within life. By making this pathological seat a fundamental fact and extending this by reference to animal function, the new pathology served to fix an idea of constant relations in the body, which became both a technical and imaginary mastery of the concept of the body.⁵⁷⁸

However, it can also be shown that what Bichat intended of his physiology differed through a basic physiological concept of living function that he attributed to the higher strata of organisational capacity. The idea-sign served to distinguish the three different approaches to observational measure, i) the ideally stable forms of physically analogous forces, ii) the stability of an organic system, given in relation to evident physical constancies observed as natural relations, and iii) functional stabilities representing conceptually mean rhythms attributed to notional physiological bonds, such as heart beat and respirations. At the physiological level the sign upheld this threshold of difference that could demonstrate a mean concept and its periodic returns within apparent parameters of a necessary concept of the physiological body. The idea-sign served the ambition of the rationalising discipline looking to describe life's functional capacity. It was understood that the Sensational method offered inherently provisional solutions to this idea.

⁵⁷⁷ Foucault (1975) p128-129, p134-140

⁵⁷⁸ Foucault (1975) on Condillac's *Logic* p116-117, on the displacement of localised values for ordinal ones p130, on the ambition of a technical language p144.

Observation of the Normal and the Pathological

In observing vital phenomena in the whole the sign discerns thresholds of difference. Bichat is therefore following the concerns of the Montpellier physicians for whom sensitivity to differences in a dynamic equilibrium was informed by their caution over vivisection. A concern with surgical intervention into the living body was that it produces a pathological type alteration leading to a qualitative alteration that distorts the functional capacity of the body. This aspect of the Montpellier doctrine marks the practical indeterminism which Bichat will be shown to uphold. It distinguishes his approach from that of Haller, who prioritised the anatomical approach to isolating physiological properties historically given as sensibility and irritability. His aim was defining more clearly how particular vital properties actually appeared in the body as visible evidence that served the purpose of systemising a progressive general physiology.⁵⁷⁹ Bichat understood himself as doing something distinct from Haller, but nor did not see himself upholding the vitalism in the sense that made Stahl so influential for Montpellier physicians. Bichat distinguished a method from both these predecessors, whom he thought had not properly analysed vital properties: in *Anatomie Générale* he indicates the danger to, -

“...apply the science of natural philosophy to physiology would be to explain the phenomena of living bodies by the laws of inert bodies. Here then is a false principle...In this respect my work differs in its general tenor from those of physiology, and even from those of the celebrated Haller. The works of Stahl have powerfully inculcated the inestimable advantage of laying aside all these collateral aids, which overwhelm the science that they purport to support. This eminent physician, had not analysed the vital properties, and, therefore, was inadequate to explain the phenomena in their real aspect. Nothing is more vague, and satisfactory than these words, vitality, vital action, vital influx, etc when their sense is not adequately defined.”⁵⁸⁰

This problem of the vital necessitated explaining phenomena in their ‘real aspect,’ which meant it needed a positive approach. Bichat saw the discipline of observation, and specifically the idea-sign, as developing a new language in moving between the anatomical approach of Haller and the conceptual point of view of Stahl. Observation of “the sum of the functions which resists

⁵⁷⁹ Bichat (1824) I xxxix cf Albury (1977) p68. This is central to Albury’s analysis of the relation between Montpellier and Haller’s methods, see p72

⁵⁸⁰ Bichat (1824) sect 3

death” was a point of view that delimited physical differences at the level of animal function. *Recherches physiologique* integrates this perspective into the rational physiology by confronting the indeterminate animal concept through tests by an experimental method as recounted in the second part of the book.

Because observation was an analytical discipline with its own norms of practices, Bichat understood himself as doing something distinct from the “animated anatomy” of Haller. This disciplinary practice took the perspective of empirical sensitivity as the limit of anatomical intervention in its useful relation to a general physiology. The method follows Condillac/Montpellier in two things; firstly, prioritising a natural method of division meaning restricting itself to visible alterations as contained in comparable regions. Bichat’s perspective of pathological observation to delimit tissues into the workable language was to be integrated into a general physiology; his awareness was that natural comparison was theoretically contained only within a stable system of observations. Secondly, the extension of this practice through a pathological method introduced a shift in focus within epistemological problems of observation. Because observational analysis carries within it the disciplinary techniques of natural composition, it relied on the correct distribution of phenomena prior to an interpretation. Therefore the problem was to define a regional awareness prior to that which could contain phenomenal alterations that were significant.⁵⁸¹

In the logic of *Traité des Membranes* this followed organic units which naturally isolated tissues informing a ground or matrix for interpreting observable relations to the organs. *Anatomie Générale* then interprets this against the level of the body as the matrix for developing a future science. The central thinking of *Traité des Membranes* and *Anatomie Générale* was to inform a certain legacy of Bichat’s thinking which gives the sense of positivistic optimism extended to the future medical sciences. *Anatomie Générale* carried this over into the provisional aims of Bichat’s *Cours d’Anatomie pathologique*; this text promises the synthetic ‘détournement’ of humoralism in moving towards an exhaustive concept of the body, -⁵⁸²

⁵⁸¹ Bichat (1824) p22. Also Canguilhem (1994) p212

⁵⁸² Rey (1991)

“All is thus indicated...that diseases relate to us in the solids and fluids; to claim the opposite would no longer admit the *consensus unis, conscientia omnia* which binds the whole machine, and joins together all the forces of the life for concerted resistance to death”⁵⁸³

This sense of purpose has a polemical value consistent with a later Positivism, but elsewhere Bichat makes a more cautious claims of the extent to which his tissue methodology should actually relate to a general pathology and its consequent significance for physiology.

It has been suggested that focussing on this legacy neglects the perspective on Bichat’s method which extends from *Reserche Physiologique* (experimenting on the whole) to *Cours d’Anatomie Pathologique* (observation of the limit).⁵⁸⁴ But in fact, this approach was already programmatically outlined in Bichat’s early *Discourse* through the disciplinary method by which observational physiology should proceed. Bichat was sensitive that pathological observation presented increasing difficulties for the analytic method in its ambition to displace humoral medicine. This reflects on the wider ambitions for implementing the synthesis of the rational physiology. The historical background to the pathology text indicates how Bichat may have reflected on the use of the observational method by suggesting that the discipline should restrain itself to the more heuristic values of a medicine.

Textual Considerations of *Anatomie Pathologique*

Bichat’s pathological anatomy course started in September 1801 and comprised of 80 lessons given over a six month period. The period immediately preceding this saw him prepare the *Anatomie Générale* text which was produced on the basis of an intense flourish of work of clinical observation following his appointment on the 26th January 1801 at the Grand Hospice d’Humanité. According to Bichat’s accomplice Matthieu François Régis Buisson, this involved over 600 autopsies over the few months that the work took to produce.⁵⁸⁵ The enthusiastic work of the *Anatomie Générale* period left little chance to consult with texts of those who preceded

⁵⁸³ Bichat cf Montiel (1964) p28.

⁵⁸⁴ Notably in Lesch (1984)

⁵⁸⁵ Monteil (1964) p12. This text appears in 1964 after Foucault’s *Birth of the Clinic* of 1963.

him in the field;⁵⁸⁶ this changed as he had more time to reflect on the implications of his findings during the period of the pathology course. For the new pathological anatomy course Bichat adopted a different approach.

The edition of *Cours de Anatomie pathologique* published in 1825 by François Gabriel Boisseau was collated from a manuscript edited by Pierre Auguste Béchard. Even at the time this was a contested document by other followers of Bichat, notably Jean Cruveilhier, another of Bichat's students, who thought that text did not accurately reflect Bichat's disciplinary intentions; this was of developing a symptomatology.⁵⁸⁷ In this context, an alternative perspective appeared in a manuscript of notes for the course recovered by the Grenoble Medical School in 1902. The medical historian Jean Monteil, writing in 1964, saw it as significant that the *Anatomie pathologique* notes come after Bichat's major achievements and could therefore be seen as a recapitulation of his oeuvre, despite the fact that this production was compressed into only two years. More importantly perhaps, the Grenoble notes complement other individual accounts of Bichat's pathological anatomy course, including those of Jean Cruveilhier, in its reflections on the schematic form and limits describing the anatomical project. In this respect Jean Monteil considers the Grenoble text to particularly highlight some of the difficulties that get effaced from *Anatomie générale*.⁵⁸⁸

As Bichat scrutinized his data from the overall concerns of a didactic, reflecting on the hasty syntheses which appeared "from the amphitheatre," a different emphasis appears as to the status of pathological anatomy. Primarily this is framed as a medical practice rather than a grounded science. In emphasising the necessity of being a provisional knowledge, this concurs with what Cruveilhier, who attended the pathological anatomy course, understood as Bichat's intention. In the notes from the 1902 text, Monteil quotes,-

"It is here, especially, where one has seen the weakness of medicine and the need for following it with the torch of the pathological anatomy, the torch which one shines with that of observations which precedes and which guides. Thus open corpses, see the

⁵⁸⁶ Ibid p12

⁵⁸⁷ cf Monteil (1964) p25,

⁵⁸⁸ Monteil (1964)

patients. In the rooms of private clinics and amphitheatres, here are the books which you must consult, the authors according to whom you must act. It is by seeing the diseases in the living, the devastations after death that we will be able to know them, to prevent them and cure them, fortunately.”⁵⁸⁹

The method therefore emphasises only that by seeing and experiencing diseases in living bodies can symptoms be related to a pathological perspective. This interpretive threshold of living experience reflects a consistency that follows what one may identify as Bichat’s vitalism. From the earlier *Discourse*, the pathological emphasises the constant confusion of temporal separations between phenomena and symptoms, inherently disruptive of any unified point of view. Awareness of the symptom is an index to difference in kind, the domain which the physician approaches at the level of the ‘torch which one shines,’ the pathological view. This context could be seen as Bichat maintaining a fidelity to the disciplinary techniques defined by holding the idea-sign is the guide to the fringes of the physiological concept of the living.

The problem of the idea-sign was in defining a region for interpretation that excluded all instances less understood, the uncommon phenomena likely to lead to hasty conclusions for an analogical method. Bichat seems to accept that the pathological was truly an unknown without denying or reducing these as phenomena.-

“It is necessary to banish this disease of the nosological frame, not because it doesn’t interest, but because it is unknown for us.”⁵⁹⁰

This indicates how the pathological view intended to offers a functional evaluation for medicine to be taken up in a task against a ‘therapeutic anarchy.’⁵⁹¹ As with Cabanis, the study of physiology represented a future of science, but Bichat gave it the awareness of a threshold at which the present science overreaches itself. Here he retained his physician values through interpreting symptoms according to an idea of life.

⁵⁸⁹ Bichat cf Montiel, (1964) p26

⁵⁹⁰ Ibid p28

⁵⁹¹ See Monteil (1964) p31-33.

The Threshold of a Physiological Concept of Life

The interpretation of the intermediary state between health and disease gave a specific problem which *Anatomie pathologique* appeared to equivocate in its hopes of a unified knowledge.-

“if, for each sympathy, it were necessary to imagine an explanation, thousands would hardly be enough. There is one of the laws of the whole, which one should not seek to reason in the series of parts.”⁵⁹²

But the task of the inquiring physiologist was a perspective on the function of the living body. Notably the second part of *Recherches physiologique* saw Bichat turn his attention to this physiological function and its limits. He approached this through violent intervention into the conceptual bond between heart, lungs and brain as a form of experimental analysis on the functional concept of the body. It has been noted that it would merely requires an inversion of conceptual priorities - from observed sensibilities in the whole to observing functional relations of parts - to open the breach to what later becomes understood as experimental physiology.⁵⁹³

This was an inversion, however, that Bichat seemed reluctant to make. The reason may be given as the perspective from which he insisted on retaining a vitalistic concept of the whole. The subordination of parts maintained a relation to the observation of this concept of the whole may be the core value in Bichat’s vitalism. This should perhaps not to be understood in the sense of an idea held *a priori* to informing his observations, but rather in a conceptual awareness that aligned with the disciplinary function of a knowledge to be obtained. The principle of knowledge and its strategies expressed behind Bichat’s three levels of observation; a sensibility, a pathological view, and the concept of ‘bonds’ or sympathies that the body expresses as a functioning of the whole, leaves the last concept standing over the accumulation of data ensuring the productive reasoning of the contemplating physiologist composing the new knowledge. This may also explain Bichat’s reluctance to abandon a doctrine of sensibility since it retained this awareness of the physiologist’s earlier role.

⁵⁹² Bichat cf Monteil (1964) p39

⁵⁹³ Lesch (1984) p73.

Bichat appears to maintain a commitment to such wider practices of a physiology in his day. Unlike surgeons such as Pierre Desault, who had a negative opinion of the discipline of physiology, Bichat took tissue theory as serving as a guarantee of the scientific status for a wider physiological discipline, grounding its fundamental kinship with other sciences. Yet beyond this, he also reserved commitments to the historical physiological discipline as Cabanis did explicitly in his ambitions for a wider Science of Man. Following the Ideologues conception of human knowledge as an interdisciplinary system, open to positive extension. This was the sense used by Destutt and Cabanis for whom the history of the means of knowing paralleled the systematic integration of new knowledge which they was methodically related to the activities of psychological awareness of the sign. In this sense physiology retained its primary objective relation to the knowledge of man in the functional sense, rather than as strictly producing the representational value criticised by Rousseau or Kant.

What was pursued under a positive physiology was therefore the functional concept of the physical and the moral in its broad sense. Commentators noted that Bichat, the physiologist, “hangs as a wraithlike intellect over institutions and attitudinal changes of his day”⁵⁹⁴ often meant in relation to subsequent medical history. But this was a legacy also of the radical ambition that extends through a certain idea for a Science of Man, namely for those who sort to unify the disciplinary modes under the ambition for developing a new language adequate to man’s world. Paradoxically this is characterised by producing a new scientific discourse, positively dissociated from an old knowledge. However if an 18th century vitalism represented this as a reciprocity between two modes of knowledge, in the wake of the revolution and its dispersive social politics, these became conflicting tasks that left the mark on French 19th century Positivism.

The Science of Man in Crisis

In the early decades of the 19th century there was a loss of belief that a Science of Man could deliver the unified ambitions of a future science. However, the impact of its legacy, as an

⁵⁹⁴ Lesch (1984) p79

unfulfilled task, also left its mark. For example, Bichat also impressed as an orator in conveying the need to take up a ‘special reasoning’ as is evident amongst his students. Philibert Roux commented,-

“Bichat has metamorphose my youth through inspiring me with the taste of science and the love of work”⁵⁹⁵

This is perhaps one example of why the idea of a Science of Man reached well beyond the medical program. The significance as conveyed by Cabanis and Bichat is notably felt by Henri de Saint-Simon who expressed his sentiments in 1813, in a handcopied *Memoire sur la Science sur l’homme*. He had concretely understood this as a task following,-

“the next most important step which would follow on directly from those taken by Vicq d’Azyr, Cabanis, Bichat and Condorcet, was to deal with the whole of this science in one single work by completing the material of these four great men.”⁵⁹⁶

By 1813 Saint-Simon had already established that these were methods of Positivism. It meant a composition of biology, medicine, and history while he sharply attacked those who tried to subordinate a Science of Man to mathematics, calling them the *brutieres* and “...sorry calculators who hide behind their ramparts of X and Z.”⁵⁹⁷ Broadly speaking, Condorcet’s statistics were seen as the technical tool by which to multiply the powers of the human mind, displacing superstition and error, democratizing and liberating but importantly by 1813 Saint-Simon already saw himself as distanced from many aspects of Philosophe thought.⁵⁹⁸ What could appear to Condorcet as epochs of history described as incrementally progressive, was described by Saint-Simon in *Introduction aux travaux scientifiques de xix siecle* (1807-8) as an active struggle between forces, organic and critical, which were expressed in the overlapping systems of knowledge, each growing out of the contradictions of the other.

Internal tensions necessitated the overturning of the old order so that the ‘new’ could be brought into being. There was an undercurrent of historical force that informed Saint-Simon’s concept of progress, he saw forces that needed negotiating as ultimately they dominate history. This was what all modern knowledge ultimately has to contend with; to ‘become positive’ in knowledge

⁵⁹⁵ cf Monteil p44

⁵⁹⁶ Saint Simon (1966) XL p27-28 ‘Memoire sur la science d l’homme’

⁵⁹⁷ Ibid p39-40, Saint-Simon and Taylor (1975) p111

⁵⁹⁸ Manuel(1956) p117

was a task undertaken in the face of this dynamic crisis of change, against which knowledge could never be absolute but always provisional. The future science was displaced by knowledge, now functional and relative only to a phase of history. The historical meant what was fundamentally understood of a general organic movement, and this saw Saint-Simon reflecting on these physiological influences, as something conditioned by modes of synthetic or analytical knowledge. Historical oscillations between synthetic and analytical modes were described as “systole and diastole,” appearing as the a priori/a posteriori dichotomy, a “breathing in and out,” whose origins were in the “very fibres of the nervous system.”⁵⁹⁹ In this context, the nature of science itself was now described as perspectival,-

“our eyes grow tired when we look at things for a long time from the same point of view. We then stop discovering among them new relationships. We even stop perceiving clearly those relationships we had once seen.”⁶⁰⁰

It is also notable that Saint-Simon’s concept of knowledge was an active struggle in which Descartes was the first synthesiser of the modern era, composing from particular discoveries of Galileo, Copernicus and Kepler, but that this mode of knowledge was historically relative to its epoch. Relativity was Saint-Simon’s strong idea. Approaching historical movement required an activity of ‘seeing,’ the new epochal task of the 19th century. This may be seen as inherited from the Science of Man now in the need for a synthetic knowledge of the world.

Saint Simon: The Physico-Political Task

It has been claimed that Saint-Simon was the first modern thinker to see a dynamic concept to which history was that change itself, sweeping human society along.⁶⁰¹ It may seem anachronistic to propose he followed ambitions in an Enlightenment Science of Man, but by inverting its ‘tendencies’ and seeing it as divergent forces, prone to distortion, he distinguished himself from Condorcet’s rational political action, ultimately under the possibility of ‘scientific’ control. In contrast Saint-Simon reflected a historical force that acted from ‘without,’ imposing

⁵⁹⁹ ‘Introduction aux travaux scientifiques de xix siecle’ Saint Simon (1859) I p73, ‘Memoire sur la science d l’homme’ pp145-146 and ‘Travail sur le gravitation universelle’ pp228-229 in Saint Simon (1966) XL, cf Manuel (1956) p143-145

⁶⁰⁰ Saint Simon (1859) I p164, see Manuel comments (1956) p143

⁶⁰¹ The claim of Emile Durkheim in *Socialism and Saint Simon*.

change upon man and that these were conditions of history. A radical modern response took up a task of confronting and absorbing its changes in maintaining a mean, by putting into effect an autonomous modern knowledge.

Saint-Simon's early development gives some indication as what he took a Science of Man to be. Prior to 1813, Saint Simon was engaged in a self styled political project following in the wake of the scattering of the 'troops of the Enlightenment.' After the dissolution of the Classe des Science Morales et Politique in 1803, and the denigration of its intellectual circles by Napoleon Bonaparte, Saint Simon's reflected on Ideologue ideas during the Consulate period. He proceeded to develop an ambition for a new encyclopedia project during the early Empire, drawing on the wider reaches of a serious study of science taken up in 1798.⁶⁰² Saint Simon was attending lectures during this time, firstly at the Ecole Polytechnique and then three years later at the Ecole de Medicine, where he became familiar with the works of Xavier Bichat and Pierre-Jean Georges Cabanis, and personally acquainted with a number of the physicians, notably Jean Burdin who went on to exert a great influence on him.⁶⁰³ *Memoire sur La Science de L'homme* formulated these ideas as a basis for Saint-Simon's 'physico-political career.'⁶⁰⁴

From Cabanis legacy, Saint Simon appears to have absorbed the possibilities of future sciences that were still defining their limits, and of which a contemporary Science of Man was drawing on indiscriminately. It differentiated itself from the 'mechanical' distributions the 17th century, and looked forward to more 'organic' concept of human knowledge. 'Organic' appears to have been understood by Saint Simon as reflecting the holistic thinking of the Hippocratic medical writers, and their integration of a broad vitalism into a Science of Man.⁶⁰⁵ However, in the new era, a crisis followed the fragmentation of scientific knowledge, sciences appeared to propel themselves as narrowly specializations which no longer gave a perspective on an interdependent world.

⁶⁰² 'Introduction aux Travaux Scientifique du XIX Siecle' (1807) cf Manuel (1956) p80, p84-88.

⁶⁰³ The 1841 edition of *Oeuvres* has selections of *Histoire de ma Vie* edited by Benjamin Olinde Rodrigues.

⁶⁰⁴ Saint-Simon (1841) p69 n5 cf Pickering (1993) p61. See also Gusdorf (1960) p308, and Picavet (1891) esp p454

⁶⁰⁵ Manuel (1956) p131.

The web of knowledge defined differing intellectual regions, perhaps in the manner of Bichat's tissues; he was conversant with tissue theory through his friend Dr Burdin from the Directory period, as recalled in the *Memoire*. Saint Simon had absorbed an idea that "all sciences began by being conjectural, their destiny is to become positive".⁶⁰⁶ In this text, Dr Burdin outlined a physiological vision for the Science of Man, being as yet conjectural but embodying the promise to emerge as positive during the 19th century. When Saint Simon writes of important questions of physiology dealt with by Vicq d'Azyr, Cabanis, Bichat and Condorcet, there are certain reservations developed in the image of the human mind inherited from Condorcet's *Equisse*. Perhaps as a consequence of the later crisis in the post revolutionary period, Saint Simon now identifies a bifurcation at the heart of a general knowledge.⁶⁰⁷

"There are two kinds of scientific study: the search for facts and the reasoning based on those facts, that is the improvement of general theory....Locke and Newton assumed a new approach: they found new facts in abundance. One found the force of gravitation the other the fact of the human minds perfectibility. The school became the Newtonian-Lockean. For almost a century it has utilised the approach bequeathed to them by these two men. It has been preoccupied by facts and has neglected theory."⁶⁰⁸

The neglected theory was Saint-Simon's core problem. This meant the synthetic function understood to be lacking from sciences of the 18th century. These made striking analytic progress, yet failed in their central task of transforming the world of man. In the wake of Descartes, positive philosophy branched into physics of the inorganic and the physics of the organic, while failing to find a unifying law.⁶⁰⁹ Saint-Simon now reflects the mood of his own epoch. By invoking a return to the spirit of Descartes, he meant finding a suitable distributive principle to substitute for the deficiency in the idea of God,-

"The idea of God lacks unity...the idea of God being defective, all the uses of this idea are thus equally defect....physicism has none of the drawbacks of deism.....The universe is a limitless space filled with matter in motion....matter exists in two forms: solid and fluid, phenomena called physical are called phenomena of solid matter. Phenomena that are mental are the phenomena of fluids."⁶¹⁰

⁶⁰⁶ Saint Simon (1966) 40 pp25-31, 'Memoire sur la science d l'homme'

⁶⁰⁷ Manuel (1956) p158

⁶⁰⁸ Saint-Simon and Taylor (1975) p86

⁶⁰⁹ Saint Simon (1859) I p121n1, 151, cf Pickering (1993) p72

⁶¹⁰ Ibid I pp199-201

This ‘solid and fluid’ dualism is identified with another transformation, the historical movement of ideas from polytheism through deism which “lasted from Socrates to Paul,” to a modern ‘physicism’ which maps a dispersion given to an abstract “sole cause of all physical and moral phenomena.”⁶¹¹ The significance is that by 1813 Saint Simon was moving beyond a physiological debate and was now looking to integrating wider sources to mediate similar basic concerns as an earlier Science of Man.

One source was *De L’Origine de Tous Cultes* (1798) written by Charles Dupuis which had been popular amongst liberal readers through its debunking of Catholicism. Dupuis held that science should displace religion which was a tool of repression and that the common people should abandon it for reason. This impressed Saint-Simon, although he took the opposite view. He thought religion should adapt itself to the new sciences becoming “a set of applications of general science by means of which enlightened man could govern the ignorant.”⁶¹² This is both an extension of Ideologue thought but also a difference since it equated religion with being a political tool. Saint Simon was integrating ideas drawn from the Counter-Revolutionaries,⁶¹³ and displayed an admiration for the way that Chateaubriand had portrayed Catholicism in the middle ages in *Le Genie de Christianisme* (1802). Chateaubriand particularly emphasised the aesthetic nature of medieval religion in its affect it on political and social unity and this aesthetic nature of the socio-political domain indicated a significant shift.⁶¹⁴ It also partly reflects the context in which the writing of Louis de Bonald resonated with Saint-Simon. De Bonald blamed anarchy in French society on aesthetic individualism of the Enlightenment making its effect on the destruction of a social order.⁶¹⁵

⁶¹¹ Saint-Simon and Taylor (1975) p86

⁶¹² Saint Simon (1966) 6 p169 cf Pickering (1993) p73

⁶¹³ Notably Louis de Bonald (1754-1840), Joseph de Maistre (1753-1821), Francois Rene de Chateaubriand (1768-1848) and later Félicité Robert de Lamennais (1782-1854).

⁶¹⁴ Pickering (1993) p73n

⁶¹⁵ Louis de Bonald blamed chaos on a failure of the 18th cent. philosophical enterprise. De Bonald (1847) ‘Discourse préliminaire’ cf Koyré (1956) p58

Ideology, Language, Nature

Louis De Bonald has often been associated with the reaction against the legacy of an 18th century concept of 'nature.' In this context it meant the principle that lent itself to the popular sovereignty through for example Rousseau's social contract. But equally he held Philosophes to be in error for example in the legacy of Condillac who accounted for an intellectual artifice introduced as a false concept of man.⁶¹⁶ Both Rousseau's natural man and Condillac's statue were an illusory human nature that attributed society to being a mere convention. De Bonald thought that this displaced another principle which understood the social contract in terms of a religious principle and any idea of radical intervention only prevented society from naturally constituting itself and achieving a natural stability.

De Bonald thought that a concept of society existed under the union of two aspects, the political and the religious, to which civil society was a principle of mediation. The associative principle foregrounds the 'just order,' is 'necessary' only to the extent that history has demonstrated that it could not be otherwise. The distortion of natural composition of a society demonstrates the error in the Philosophes doctrine on human nature; they gave the Republic an idea of man as an abstract intellectual construction.⁶¹⁷ The principle which De Bonald attributed to history follows the language argument as Condillac had earlier. Language is seen as the exemplary medium of social cohesion but a domain of discourse is neither arbitrary nor mere conventional; this was what De Bonald seems to have understood Condillac to be proposing. Rather, the emphasis is on the notion that the linguistic sign implies an *a priori* socialised thought - social convention necessarily presupposed speech. This was a necessary relation between signs and speech that gave a natural expression of exchange of values. From this perspective, the idea-sign was an arbitrary construction, not an essence attributable to human nature. Essence grounds the premise for the argument that intervention, in the manner aspired to by Condillac's 'new language,' puts 'ends before the means.'⁶¹⁸ Examining this as a question of priority reveals that there can be no such thing as a 'new language' since truth always appears excluded at the level of the individual.

⁶¹⁶ Koyré makes this point.

⁶¹⁷ De Bonald, (1843) preface cf Koyré (1956) p61

⁶¹⁸ Derrida makes the comment that Marx reads Condillac's confusion of use-value with exchange-value. Derrida (1980) p103

Individual ‘truth’ would therefore be discounted as a moral impossibility since the moral can only be expressed at the level of the social through a collective conscience.⁶¹⁹ Collective knowledge is understood as the capacity, the gift of history, handed down in the face of the dangers of a frivolous individualism. Against this history an inherent lack in any ‘new language’ is embodied by the central problem of error by which the modern world dangerously extends destructive risk in material technologies that penetrate the very fibres of the social body.⁶²⁰

When Saint-Simon argues for the organic unity of the middle ages, he draws on De Bonald at source. But he differs in reversing any unity attributed to the middle ages for a grounding of the coming scientific revolution. Galileo, Bacon, Descartes, Newton, Locke and the Encyclopaedists all contributed to a critical overturning of such a medieval society with the new knowledge initiating the dynamic modern world based on the new physicism. It is this world that his scientific integration intends to envelop as a Science of Man.⁶²¹

From *Memoire sur La Science De L’homme* to a New Anthropology

In 1813 Saint Simon was still outlining such an integration in relation to the discipline of physiology. The discussion with physician Jean Burdin in *Memoire sur La Science De L’homme* explores the idea that a general knowledge became less conjectural with experience as an organic development moving from the simple to the complex. A science of ideas developed from a future science.-

“Psychology is beginning to be based on physiology and to rid itself of the prejudices on which it was founded...Physiology does not yet deserve to be classed among the positive sciences but it only has to take one more step in order completely to rise above the conjectural sciences.⁶²²

In this respect, physiology was seen as the primary domain of knowledge that the educated man should explore as it was understood to embody the general idea by which an elite could guide society. Such an informed Science of Man differentiated between modes of being “by the

⁶¹⁹ See Robert Nisbet (1944) pp315-331

⁶²⁰ De Bonald cf Koyré (1956) p69

⁶²¹ Saint-Simon and Taylor (1975) p99

⁶²² Ibid p112-113

combined intellectual power of the physiologist and the philosopher...” which implicates the programmatic task for the physiologist/philosopher. *Memoire sur la science de l’homme* approached this as the “series of progress of the human mind,” a future science that appears consequential of its past and Saint-Simon gave this as a historical account of emerging modes of knowledge from his alleged discussion with Jean Burdin. What he expounds is a theory of knowledge by which the new society can mediate its own transformation, by the differentiation of social class like an organic body where intelligence was taken as proportionate to the degree of development evident in their phenomenal existence.⁶²³

This led to an ambition that the clergy be reconstituted as a scientific corps upheld through the strength of a specialised knowledge and its mediators, “as long as the principles that it knows are unknown to the common people.”⁶²⁴ Significantly Saint-Simon objects to Condorcet upholding Rousseau’s conjectural idea of the ‘noble Savage.’ By equating a universal history with a human life cycle, *Memoire sur la science de l’homme* also drew on the new anthropology experience seen as informing the stages of a development of man. The basis for this was that he thought that recent anthropological evidence of explorers such as James Cook, Louis Antoine de Bougainville and Jean-François Le Perouse had positively superseded speculative historicism.⁶²⁵ Because it could now be demonstrated that “a non interrupted series of observed facts” followed from primitive man to European societies, Saint-Simon extended the physiological idea of man into the field of cultural anthropology.⁶²⁶ His euro-centrism gave a progressive vision that took its twin aspects from societies ability to civilise the individual through a collective language, and the fact that European societies were seen as scientifically advanced.

However, a notably darker vision appears in the text *Travail sur la gravitation universelle*, written in the same year but with the urgency of a program for civil reconstruction. This was now a response to the crisis of the Napoleonic wars which left Saint Simon seeing a society faced with forces that could “plunge the human species back into the state of nature which is

⁶²³ Pickering p82n.

⁶²⁴ Ibid p114. also Ansart (1970) esp. p18-25.

⁶²⁵ François Le Perouse was Commander of the French expedition to explore the Pacific in 1785

⁶²⁶ Saint Simon (1966) XL p115 cf Pickering (1993) p84

continuous war.”⁶²⁷ This demonstrated his conviction that progress was only periodic, transitional and even cataclysmic; *Travail sur la gravitation universelle* describes an apocalyptic vision of the gradual desiccation of the globe as mankind falls backwards through a series of stages until regressing into the brute with an imaginative vision of the last man having drunk the final drop of water before reflecting on the pathologically morbid realisation of mankind finally disappearing from the face of the earth.⁶²⁸ At the limit of the old physiological debate, this shift can be illustrated by pointing to the new anthropology that was emerging during the early 19th century. Already when *Le Société des Observateurs de l’homme* was founded in 1799, a debate was unfolding that called for “profound metaphysicians and practicing physicians, the historian and the voyager” to join in with the comparative study of man.⁶²⁹ Those who stood forward included biologists Cuvier, Jussieu, Geoffrey Saint Hillaire, Lamarck, physicians Cabanis and Pinel, chemist Foucroy, explorers Bougainville and François Le Vaillant and Linguists Destutt de Tracy and Roch-Ambroise Sicard; this was an interdisciplinary group who met for twice weekly lectures on the natural history of man. But a notable event occurred in 1800 when two ships, *Le Géographe* and *Le Naturaliste*, embarked on an expedition to map the coast of Australia. One of the tasks taken up by the Société had been to prepare instructions for ‘studying savages’ for the accompanying nine zoologists and botanists.⁶³⁰

The ‘observateurs’ that rose to this occasion to “perfect anthropology” were Joseph Marie Degérando and George Cuvier with marked differences in their approach. Degérando brought with him the tradition of the *Classe des Science Morales et Politique* and the Ideologue method of comparative analysis aiming at a Science of Man. He proposed learning locals languages as crucial to becoming like their ‘fellow citizen’ and open an exploration through Ideologists psychology. Savage articulation was “no doubt composed of symbols as arbitrary and conventional as our own” yet they equally could present the insight into a “beginning from the language of action.” Degérando was therefore seeking a bridge from body to mind on the basis of sensationalist theory. Observations of social interaction informed the important problems of

⁶²⁷ Ibid XL p254 cf Pickering (1993)p86,

⁶²⁸ Ibid XL p294-296 cf Manuel (1956) p161, also see appendix.

⁶²⁹ Stocking (1964) p135

⁶³⁰ Under the Commander Nicolas-Thomas Baudin (1754-1803). The Napoleonic wars eventually cut short these ventures.

questions of liberty and the status of organised religion.⁶³¹ The image of the ‘voyageur-philosophe’ travelling into the past, accords with Saint Simon earlier ambition of resolving the *querelle des anciens et moderne* through a progressive politics. By contrast, Cuvier represented the emerging life sciences position developed under his comparative anatomy, the new taxonomia. His approach displaced the language debate and emphasised bodies and their structure. Cuvier’s interests suggested that the voyagers should make sure to visit the places where the dead were buried to obtain skeletons, and marked the significant difference in approach emphasising the epochal shift that happened during these years.⁶³² In the event, it was François Peron who joined the expedition. He noted how racial differences in the combined geological and zoological data indicated that Tasmania and Australia had split geographically before they became populated. This led to a radical interpretation through the view that races were ‘aboriginally’ distinct thereby foregrounding the racial difference that marked the end of the myth of the noble savage as the seat of a ‘mysterious history.’⁶³³ The advent of a new anthropology and can be associated with the reaction against the egalitarian optimism of the Revolution.

This gave the new anthropological basis grounded in theories of animality and informed by visions of degradation or ‘aboriginal difference,’ and were new theoretical choices that appeared to the early 19th century earlier sustained by the Ideologues approach. The possibility that suggested itself through the new anthropology was polygenism and a theory of innate difference that took its evidence from the study of skeletal structures equating visual cranial differences with mental differences opening a central problem for anthropology until redirected under Darwinian theory.⁶³⁴ However Cabanis physio-psychological approach was primarily a cultural concern and this distinction was precisely why Degérando was content to leave questions of polygenism (‘lumpers’ and ‘splitters’) unanswered. Such motivations were evident of the tradition of a Science of Man, to which cultural anthropology retained its function as a reformers science against the cultural legacy of the past.⁶³⁵ What the new anthropology explains is the loss

⁶³¹ Stocking (1964) p139

⁶³² Ibid p143.

⁶³³ Ibid p145

⁶³⁴ Until 1859, anthropology in France had become above all ‘craniology’. Stocking (1964) p146.

⁶³⁵ Stocking asserts Degérando’s deference, Ibid p146

of a way of thinking, which is what Saint Simon confronted with an apocalyptic vision; after this he took up Positivism in a modified form.

Taxonomic Biology and Vitalist Physiology

A similar motivational shift followed in questions of biological organisation when confronting the heritage of Maupertuis, Buffon and Linnaeus. In debates on natural history at the Muséum d'Histoire Naturelle in Paris from around 1795, Étienne Geoffroy St Hilaire, Henri Ducrotay de Blainville and Georges Cuvier convinced fellow naturalists to take the model of organisation in-itself, as distinct from the specific configurations of living bodies, to be the central notion of a zoological taxonomy.⁶³⁶ In the 1793, Cuvier brought this concept of organisation to a classification in natural history by emphasising how specific configuration of living bodies obeyed principles evident as necessary combinations of organs. Necessity now appears as a structural limit evidently imposed externally and was read against an internal purposiveness; the general logic of the organisms activity was therefore inscribed on its material form. For the nascent biological sciences, these organic forms were read as the 'vocations of living beings' in an order of nature, the innate integration of function into biological structures that indicated a coordination or subordination of life's activity. This demanded naturalists revise older concepts of life.

A revision of natural history through an image of anatomical structure gave the new biological domain its classification in terms of 'assemblages of functions' to be integrated into the concept of the organism. Rather than interpreting the whole as a juxtaposition of organs, the organised whole prioritised function over any other direct relations of visual anatomical structures. What Cuvier prioritised in his analysis of structure now substituted for the discipline that relied on a visible resemblance in the parts; this effected an inversion that prioritised functional differences,-

“differences between organs of the same kind are precisely the object of comparative anatomy...we are going to take each one of the functions which we have discussed and examine...the particular means by which are effected in different animals.”⁶³⁷

⁶³⁶ Noted by Guillo (2002) p134

⁶³⁷ Cuvier (1802) 1:34-35 cf Albury (1977) p89

However, this classification according to functional difference was not unique to Cuvier; it was an emerging paradigm of the day. In fact, Bichat also lectured on how one organ alone does not carry out a function, and that function was the result of the labour of several organs.-

“In the animal economy there are a great number of organs which appertain to several apparatuses.”⁶³⁸

Bichat also indicated that a purely topographical anatomy was primarily for the use of surgeons and artists, implying that advanced physiology of higher animal function fore-grounded a ‘composite function.’ This distinction paralleled the Museum debate which found its ascendancy from the turn of the 19th century where composite function served to confront the theoretical problems associated with the doctrine of vital properties in organic matter.

Composite function was the new theoretical paradigm, but this embodied further conceptual choices well illustrated from the perspective of the museum debate. Jean-Baptiste Lamarck joined Muséum national d'Histoire naturelle as a professor of zoology in 1793. Writing in *Hydrogéologie* (1802) he used the term biology following the Greek *βίος* referring to a mode of life (a fulfilled life) and indicated a status of the living through its actions or vocation. But the early biologists were still contending with the heritage of Greek science which derived ideas of life from the sign of life common to man and animals; *ψυχή*, as illustrated by what Homeric heroes risked in their struggles.⁶³⁹ This latter term lent a richness of meaning beyond any individual presence. But with the emergence of more positive Greek sciences needing greater precision after BC 550, they gave the term *ζώνη* to distinguish life as soul. This was meant as evidence of activity that distinguished it from the opposite, inanimate passivity.⁶⁴⁰ It was a distinction that helped explain the dynamic idea of the transformation of matter in the world from an activity standing behind appearances. For Aristotle, the more positive paradigm was to see the animal as a machine possessing a soul and, drawing on his medical knowledge, as something possessing vitality, meaning “a thing can nourish itself and grow and decay.”⁶⁴¹ In the

⁶³⁸ Bichat (1834) 1: xi,xix cf Albury (1977)p89 “Citizen Cuvier and Dumeril have also chosen the function as the character by which to classify the organs of the animal, I shall follow the same procedure; it is the only one which can be adopted in our present state of knowledge.” (Ibid xv)

⁶³⁹ As understood as ‘the course of life’ Aristotle, (N Ethics), or Hesiod, ‘to live by a thing’ (Herodotus). see entry in Liddle Scott

⁶⁴⁰ T. S. Hall (1968) p343-344

⁶⁴¹ *De Anima* cf Canguilhem (1994) p67, p80.

modern era, biology that aimed at expanding its scientific language beyond the legacy of the Greeks, returned to the problem through an intensified study of natural history towards the end of the 18th century.⁶⁴² The problem of classification was a conceptual problem around the difficulty of attributing function to the activities of life. The physiological discipline already confronted this from the mid 18th century as Georg Stahl, looking to ground physiology's elemental notions, proposed a concept of life appearing as a power to suspend its destiny of corruptibility. In this way Stahl's vitalism proposed seeing organs as being tools with specific ends but in which organic function was the unknown mechanism that attained these ends.⁶⁴³ An idea of function already looked beyond the simple oppositions of presence and absence of *ψυχή*; modern vitalism looked to index functions that relate to activities defined through a concept of natural being. When Kant drew on this he saw the organised body as both machine and organism, but distinguished an organic machine further through its need to possess a formative energy on the grounds that an organised body was not just organised but self-organising.⁶⁴⁴

In the Muséum d'Histoire Naturelle, the nascent biology looked to matrix of the body for a concept of natural life. Lamarck outlined his exemplary study of form in *Philosophie Zoologique* (1809) as derived from the distension or coagulation associated with cellular tissue. In an accumulation and assimilation in this structureless gel, Lamarck saw here the origins of organic structure that extended as to a discourse on man whose transcendent nature explained why dominant races spreads out “into all the habitable places suitable for them.”⁶⁴⁵ From this anthropological basis, *Philosophie zoologique* imagined the naturalist as the voyager moving into the past, between the natural and the artificial, and beyond the restrictions of language on a conjectural basis.⁶⁴⁶

Lamarck was answering the question of the observable order of nature, from the point where nature sets life in motion and how it is organically mediated. Lamarck does not appear unclear about the limits of such a conjectural method; “if science neglects philosophy, its progress will

⁶⁴² Lanham (1968) p136

⁶⁴³ J. Schlanger (1971)

⁶⁴⁴ Kant (1978) §65 pp20-22

⁶⁴⁵ Lamarck *Philosophie Zoologique* Vol.2 p.6. see also Canguilhem (1994) p70.

⁶⁴⁶ Ibid Ch 1, pt 1, p2

not be real.” The zoological object remains provisionally situated between a productive source and the knowledge which mediates this. He confronts this as a specific problem, evident in a proliferations of secondary characteristics in animals, through a decomposition of the animal series in which he looks for two opposite factors working together to produce the animal forms. But one must understand Lamarck’s problem as not explaining a simple spontaneity of animal appearance but the historical evidence of events that have disturbed a regular unfolding of the organism.⁶⁴⁷ What was to be attributed to the observable difference that indexed unknown ‘circumstances’ between milieu and organism? In this, Lamarck’s thought retained the potential for instability in the equilibrium of living forms which philosophically was a problem of representing animal development in relation to the concept of world. This necessitates a differential concept, or open variable, rather than a principle that informs the simple rational order of a productive of resemblance.⁶⁴⁸

There is therefore, a ‘hybrid concept’ that informs *Philosophie zoologique*.⁶⁴⁹ This may be seen as following from the task of formulating a new language from a perspective of an anthropocentric biology whose value precedes the observation of form.⁶⁵⁰ But like Cabanis, Lamarck also takes habits as transformed through reactions as moral values, although he takes an inverted approach to its value in relation to physical forms, -

“at their source, the physical and the moral are no doubt the same thing. By studying the organic structures of the different orders of known animals we can provide the most impressive evidence for this truth...The influence of the physical on the moral has already been recognized. But it seems to me that we have not yet given sufficient attention to the moral on the physical itself.”⁶⁵¹

The question that Lamarck appears to be explaining is how physical actions, “habitual and energetic,” can coordinate a power to transform - to “stand in opposition to herself.” In this sense, it would be false to attribute to Lamarck’s biology an explanation of transmission of acquired characteristics, this was a new biological problem that appears for Darwin with

⁶⁴⁷ Barthelemy-Madule (1982) p53-54.

⁶⁴⁸ Barthelemy-Madule (1982) p55-63.

⁶⁴⁹ Ibid p64

⁶⁵⁰ Lamarck (1907) cf Barthelemy-Madaule (1982) p74

⁶⁵¹ Lamarck indicates Cabanis’ *Rapports* (in the notes) ‘Preliminary discourse’ to *Zoological Philosophy*

biological hereditary.⁶⁵² By contrast, Lamarck is answering the question of transmission of traits which remains tied to a moral question, and never becomes fully divorced from the question of history. Lamarck's Transformism confronts the historical problem of an archetypal Original Sin, as well as the inherited experiences of Greek thinking, rather than the future scientific problem derived from Darwinian hereditary.

Lamarck therefore shares with the writings of Condillac a sense of science confronting the weight of the past. This means both a critique and extension of Cartesian rationalism whose ambition is to extend a *querelle des anciens et des moderne* through the radicalism in positive knowledge. From this perspective Lamarck's adaptation is preceded by an evidence of a 'need,' and cannot be restricted to what we would now consider a biological or physiological concept. Rather it is tied to an idea of a task or project that relates to a wider social idea against which modern science had to make its stand. The nascent biology was still characterised through an idea of nature associated with the debate of Adam Smith's thinking of supply and demand. In the wake of the Revolution and before industrialism took root on a large scale, the rhythm of workers and the function of money was, in France, preceded by an idea of a natural order in the political and economic sphere, this was upheld by the Physiocrats under a doctrine of the land.⁶⁵³ Adam Smith had been known in France since 1777, and four translations of *The Wealth of Nations* had been published between 1779 and 1802. Such ideas were further spread in France by Jean-Baptiste Say through *Traité d'économique Politique* of 1803 and this shared the cultural background in which Lamarck's biology was a developing discourse. This discourse confronted the problem compacted into a debate over what constituted 'natural' being. As the Science of Man was already fragmenting into the new positivities during the first quarter on the 19th century, it left an inherent conflict in the grounding of a wider socio-political knowledge and this appears parallel to what was taken up by Saint Simon after 1814.

⁶⁵² According to Camilles Limoges there is actually no problem of adaptation in Lamarck. Limoges (1970) p21.

⁶⁵³ Barthelemy-Madaule (1982) p97

Saint Simon, Socialism and *Nouveau Christianisme*

The context of 1814 was that Saint Simon met Augustin Thierry and began working together on their industrial system. The problem was how to submit a political system to an autonomous knowledge which could act independently of national governments. Saint-Simon now came to see the economy as dynamically transforming societies and relegating governments to secondary importance, a radicality he associated with the dynamism of emerging industry, autonomously establishing new divisions in opposition to old feudal structures. The principle idea behind this was that human productivity links the world through a power of spontaneous organisation.⁶⁵⁴ In the wake of the Napoleonic crisis, with a political necessity in the face of looming catastrophe, Saint-Simon no longer took liberty as an individual quality. At issue was the force by which the group could represent themselves, the quality that expressed the ‘assemblage of forces’ in the collective group. On this level, the question of mediation became an important moral question of representation.

Saint-Simon is a moralist but one framed by the relativity in human knowledge. Moral actions are social activities rooted to specific historical situations. While there was no classless society for Saint-Simon, nor strictly any ‘natural’ modes of division in relations between individual, society and environment, there was the moral man. To be in tune with the forces of history, not merely a speculator of ideas, but rather someone who acts with the correctness of a historical consciousness, like an intra-organic function within the social body. Social classes were not static, but followed life cycles related to their epoch and passed from birth through to death under a dominant class. A dominant class represents the mode of being for the whole of society through their ideas and desires, expressed through their powers of organisation. This marks a break with Ideologue thinking as Saint-Simon focuses on the struggle of ideas now become a class struggle. It is a distinction that reflects how dynamic modes of modern industrial society become stripped of scientific specificity for Saint-Simon. The modern individual appears dissolute in the flow of history. His Positivism finds its task of realising an assemblage of knowledge of the world which can measure up to the forces of history. In the crisis society Saint

⁶⁵⁴ Saint-Simon had anti-government sentiments verging on the “anarchic” claims Durkheim (1959) p194

Simon saw class membership as driven by a variety of unnatural, random and extraneous circumstances, derived from inherited wealth or spurious birth rights. Under these conditions, the value of a synthetic philosophy acts against the dispersion of history. Society run through with diverging, yet ‘natural’ forces, are something to which all are exposed.⁶⁵⁵

On this basis, industrial values were championed as the expression of man’s inner drives seeking an outlet through an exploration of the world and the transformation into non-human objects subjected to an imposition of the human will. In 1819, Saint Simon was working on *L’Organisateur* with Auguste Comte as his secretary. The struggle between modes of being was the class struggle and a concept of labour now appears as an excess of material force, as something psychic, against which the idler seems destined to enfeeblement and death.⁶⁵⁶ This is not, however, to be taken in any narrow sense since *L’Organisateur* also discovers that these industrial values extend to the poets, musicians and painters. Such aesthetic roles are complementary, even necessary, as a supplement to scientific knowledge which has a dangerous tendency to particularise. The artist upholds an aesthetic power which Saint Simon understood as a capacity distinct from the analytical power of mathematics and the physical sciences. Perhaps this reflects his seeming disappointment in scientists lack of vision as commented on in *Memoire sur la science de l’homme* and *Travail sur la gravitation universelle*. Equally a generation of romantic poets, not blind to an encroaching crisis of modern times, articulated the capacity that was crucially sensitive to man’s moral health and the looming dangers of history. Saint-Simon’s response to this quest for the problematic knowledge to confront the modern situation, like much of 19th century French thought, was the search for mediation between synthetic and analytic modes of history. Saint Simon represents this as the residual task under a legacy of the Science of Man.⁶⁵⁷

Saint Simon’s earlier secretary and collaborator, Auguste Comte later emphasised his own version of Positivism, delimited to the transformation of metaphysics through the promise of a more autonomous knowledge. This was a later divergence from the interest in the industrial

⁶⁵⁵ Manuel (1956) p243ff

⁶⁵⁶ *L’Organisateur* see Pickering (1993) p164-166, Manuel (1956) p243, p253, p258

⁶⁵⁷ Durkheim (1959) p143

system. Saint-Simon, however, does not ultimately appeal to logic but to a faith, at least as an aesthetic principle of unity.⁶⁵⁸ What Saint-Simon turned to industry to provide became, toward the end of his life, achieved only through an imaginative ‘quasi’ mythical form of a new religion. An empirical precedent can be identified here. In the wake of the revolution Saint Simon had seen the proliferation of various religious cults, indeed many leaders of such revolutionary cults were known to him personally. He had observed first hand how synthetic religions swept into the void left by the Catholic church. From this observation, an anthropological principle which needed something more suitable than the haphazard ideas of the cults, a Science of Man recognised the provisional and functional tool, like a universal gravity, of representing the suitable psychological structure for human consciousness.

In his final years *Nouveau Christianisme* (1825) took up a concept of the greatest universality “which man have ever put into practice.” Following a dialogue between a conservative and a reformer, this was understood as something of which the 18th centuries had an “exalted conception,” something demanded of the human race which “is not confined to imitation.”⁶⁵⁹ The social physiology of *Memoire sur la science de L’homme* addressed a unity as a scientific project, but abandoned this in his later career in favour of a more explicitly aesthetic principle. It was a shift that looked necessarily to techniques extended as a political tool and this grounds the continuity in Saint Simon’s thinking.

The Two Cultures: The Critique of Bichat’s Physiology

A further shift beyond the physiological tradition came from François-Pierre Maine de Biran, however he still discussed the possibility of a Science of Man now seen as an experience of will.⁶⁶⁰ Although Maine de Biran died in 1824, this legacy was also the source of dispute with particular significance for Comte’s Positivism during the period of the July Monarchy (1830-1848). By experience of will meant the production of evident actions and reactions expressed as laws of the body, these were to be presented as a psychology which some understood to be a

⁶⁵⁸ Ibidp245

⁶⁵⁹ Saint Simon (1966) 23 pp96-192, Saint Simon (1964) p81-83

⁶⁶⁰ Maine de Biran (1949d) p220

science of the soul. De Biran had earlier concluded that an “immense gap that subsists always between two sciences,” namely those concerning the physical and those of the moral.⁶⁶¹ As an early ideologue, he had exchanged ideas with the medical circles frequented by Cabanis, Destutt de Tracy and Bichat in the years around 1800, and in 1803 and was even awarded a prize by the ‘Classe des Sciences Morales et Politiques’ for his text *L’influence de l’habitude sur le faculté de penser*.⁶⁶² But by the 1820’s De Biran rejected the contemporary medical discourse seen as dominated by “certain physiologists” who derived a method of division from Bichat’s classifications. This was because such methods were seen to efface internal realities of functions of the will; the physiological method of division led to arbitrary distinctions of an increasingly abstract character.

Maine de Biran therefore prioritised autonomous states of experience in relation to what he held as a unique source of knowledge. Such a source, in his 1812 text *Essai sur les Fondements de la Psychologie*, appeared influenced by Hume’s problem of causation, yet De Biran was also following a vitalist tradition after Montpellier medicine.⁶⁶³ From the latter’s legacy, he held as a physiological unknown, as an element of which explanation always falls short, which grounded his empirical priorities by fore-grounding a ‘fait primitif.’ This reflects the special epistemology that describes a physical causation, but also understood as an internal experience at the level of the body. What De Biran approached as a Science of Man was therefore a ‘new language’ given to relations of exterior impressions to internal experience and which was set out as a criticism of Ideology. He moves within a broader empirical tradition with values attributed to the ‘fait primitif’ at the origins of intellectual operations, consequently holds the particular status in relation to the question of the moral and the physical. De Biran implies that the ‘fait primitif’ can be the real basis for scepticism in relation to knowledge of physical organisation of the animal sensitivity as evident life beyond the particular. This was given to Descartes as a point of faith, and posed by Condillac from the point of view of the receptive subject. But the status of a ‘fait primitif’ in human knowledge was the object of an understanding for his Science

⁶⁶¹ Maine de Biran to two late texts *Nouvelle considérations sur les rapport du physique et moral de L’homme* (1822) and *Nouveaux essais d’anthropologie* (1823)

⁶⁶² Haigh (1984) p106

⁶⁶³ Maine de Biran (1949b) p15,29 reflecting Hume’s ‘empire of the will’ from Hume’s *Treatise* p632.

of Man despite ultimately remaining inaccessible to a formalised knowledge.⁶⁶⁴ The ‘fait primitif’ was therefore initially introduced negatively by demonstrating against Cabanis a limit to the experience of the physical through intellectual relations to phenomena, and for criticising Bichat as confusing the terms of sensibility and contractility in relations to a subjective functioning of an ego. This critique focused on the question of what is attributed to physical properties in their equivalence to psychological phenomena. Hence, De Biran takes Bichat’s classifications as purely nominal, emphasising the confusion around the use of the sign in designating vital properties.⁶⁶⁵

This marks a distinction between a simple affectation, widely associated with the legacy of Condillac’s statue, and the perception as a power for action. De Biran saw this as a question over the use of Condillac’s sign and a general confusion specifically associated with the legacy of Bichat’s classifications of habituated functions. *Recherches physiologique sur la vie et la mort* described the awakening animal maintained through degrees of sensible difference derived from a continuous organic base as two different states of sensibility.⁶⁶⁶ De Biran looks to explain what an ego perceives as a distinct experiences of two orders of perception, voluntary and involuntary.

Bichat premised experience as originating either in *organic sensibility* as an exterior force relation, or with the possibility of a judgement derived from within an *animal sensibility*. This was complicated, however, by the classification which further divides into two reactive orders of *organic contractility* and *animal contractility*; the latter is identified with voluntary muscular movement, although left as a generic term intended to explain the seat of sensory-motor action as understood to be produced under cerebral influences.⁶⁶⁷ De Biran’s point is that Bichat’s classification splits any systematic unity behind a single principle of action among the various functional differences apportioned to the parts of the body by his anatomy. By contrast, the ‘fait primitif’ represents a power that can initiate and continue autonomous movements, and behind this assertion he foregrounds the free potential of the anticipations of the consciousness of the

⁶⁶⁴ Maine de Biran (1949d) p195-197, p208.

⁶⁶⁵ Maine de Biran (1949c) p39-40

⁶⁶⁶ Ibid p48

⁶⁶⁷ Ibid p50-51

mind which is necessarily attributed to broader facts of the organism in general. De Biran is suggesting that Bichat's general method of division subordinates perceptions in the human consciousness as potentially analogical to physical properties in the material body. From this he asserts that the physiological method is limited in relation to general forms of human knowledge. It is a limit that is material and the physiological discourse is simply unable to span it.⁶⁶⁸ De Biran defines, as a distinct domain, an 'empire of the soul' transcending Bichat's classifications of properties in *Recherches physiologique* which imply the psycho-physical parallelism between two essentially different natures.

De Biran points out in *Nouvelles considerations sur les rapports du physique et du moral de l'homme*, an essay from around 1820, that in the early 19th century physiologists were attributing to muscular organs properties understood as 'special modes' of sensibility and taken as evidence of universal facts of natural life. Physiologists used these facts to explain transmission and continuation of impressions and offered them as ontological notions unfolded from a concept of the organic life of sensation. The 'fait primitif' upheld a limit against such a notion of sensation, but Maine de Biran's legacy was to open a domain which could stand as a modern doctrine of the spirit.⁶⁶⁹

Radical Positivism: Auguste Comte

Maine de Biran's critique was therefore seen to open the domain for a psychology of the 'human spirit.' This was understood as a particular notion of freedom taken up against physiological reasoning. The philosophical legacy was taken up during the period of the July Monarchy (1830-1848) by Auguste Comte's notable adversary, Victor Cousin who associated this with a true Science of Man,-

“any sound philosophy is the study of human nature...the Science of Man, psychology, is certainly not all there is to philosophy but it is the foundation.”⁶⁷⁰

⁶⁶⁸ Ibid p53

⁶⁶⁹ Ibid p44-48

⁶⁷⁰ Victor Cousin (1840) Preface of W.M. Simon (1965) p47.

As Cousin understood it, this was a Science of Man that had been obscured by the successes of the physical sciences as the scientific spirit had overstretched its authority. But by examining reflections of phenomena from the perspective of the human mind, Cousin frames the practice of ‘psychology’ as the preliminary study mental processes in the discipline of observation. This emphasised the distinction between soul and body. There was, however, also a cultural significance during the period of the July Monarchy as Cousin was a liberal defender of constitutional monarchy which he approached in the spirit of compromise between absolutism and democracy. Cousin became a symbol of the educational establishment to which he took up the task of the “rescuing of the youth” of France from precisely from the excesses of abstract scientific reasoning.⁶⁷¹

Auguste Comte specifically took up an antagonistic relation to such psychologist-philosopher defenders of a Science of Man. His basis for this was an epistemological practice to which all individual liberty appeared as something of a mirage. In this respect Comte also followed a Cartesian strategy, one which understood science as a universalising form of praxis moving beyond what he saw as an outmoded practice of contemplation. Comte’s primary struggle can be characterised as this transformation of his perceived pre-scientific legacy, to which his Positive philosophy meant taking a historical relation to social thinking; “we always labour for our descendants,” says Comte, “but under the impetus of our ancestors.”⁶⁷² Comte’s problem was primarily historical, and he was suspicious of Cousin’s psychology as subduing the radical implications of modern scientific knowledge on the basis of spurious ontological claims.

Comte was particularly contentious over claims made for observational experience and the value attributed to a practice of observation. In this respect, Cousin reserved certain privileges for philosophising, namely prioritising the study of experience over a strictly theoretical approach to physical laws which should be understood in relation to the values outlined by Descartes *Meditations*.⁶⁷³ But Comte saw this as ‘symptomatic’ of a deeper commitment to a privileged

⁶⁷¹ W.M. Simon finds this regularly stated in *Cours d’histoire de la philosophie modern* also in *Leçon sur le philosophie de Kant*. Another notable influence would be Hegel whom he met in 1817 according to Pinkard (2000) p381

⁶⁷² Comte (1851)Vol 4 p34 cf Scharff (1995) p10

⁶⁷³ Cousin (1826) xiv cf Scharff (1995) p24.

metaphysical notion of man. Against this, the radical aspect of modern thought was understood as scientific method, the tool for pursuing another task, namely that aspect of Descartes whose praxis seeks elimination of a residual and outmoded metaphysics. Descartes invested critical powers in the standards of a praxis and, from this perspective, Comte found Cousin's psychology to be a regressive 'manoeuvre' deliberately opposed to the tools of science which he thought were employed against the "groundwork of gross and mischievous quackery." The true implications were of a radical Positivism.⁶⁷⁴

The radical dimension was an epistemological strategy that aimed for a more autonomous 'organic approach'.⁶⁷⁵ After 1822 Saint Simon and Auguste Comte started working together on *Du système industriel* and were focussed on the contemporary social debates of the day. Saint Simon's approach to De Bonald, the Counter Revolutionaries and a laissez faire criticism limiting intervention of the state has been discussed above. By way of contrast, Comte wrote that "there is no liberty of conscience in astronomy, physics, chemistry and physiology..."⁶⁷⁶ He was certainly familiar with Saint Simon's earlier *Memoire* essay, and Burdin's theory of the sciences going through a conjectural phase; Comte's perspective in *Du système industriel* was to ground positive ideas in what later became famous as the law of three stages.-

"Because of the nature of the human mind, each branch of human knowledge is necessarily obliged in its advancement to pass successively through three different theoretical stages: the theological or the fictive stage; the metaphysical or the abstract stage, and finally the scientific or the positive stage."⁶⁷⁷

It is the law of the three stages which is intended as a dynamic perspective on the distinct regions of knowledge which in themselves can only be described from a static point of view.⁶⁷⁸ Comte's dynamism therefore maps a history through the "famous theological and metaphysical dogmas of optimism" which had earlier offered "very useful ways of reasoning." Without explicitly identifying a value to 'use,' Comte's defined the battleground for this Positive reasoning.⁶⁷⁹

⁶⁷⁴ Scharff (1995) p27, W.M Simon (1965) p48. The quackery comments in *Cours* trans. Martineau, Comte (1893)Vol. II p136.

⁶⁷⁵ Comte in *Du Système Industriel* Vol 4 'Appendice' p47,48 cf Pickering (1993)p195

⁶⁷⁶ Ibid p53 cf Pickering (1993) p196

⁶⁷⁷ Ibid p77, 101 cf Pickering (1993) p199-201

⁶⁷⁸ This defines Comte's approach for Lévy-Bruhl (1903) p69

⁶⁷⁹ *Du Système Industriel* Vol 4 'Appendice' p116 cf Pickering (1993) p207

Comte was a more accomplished reader of science than Saint Simon and also well versed in the Montpellier tradition of medicine. What constituted an organic approach divided them during the writing of *Du système industriel* as Comte favoured stricter scientific grounds for overcoming diverse intellectual and ideological political reasoning. In this respect, his epistemological approach can be seen as aimed against individual political manoeuvring, but with a practical aspect that retained an ethical value attributed to a living whole. Such ethical necessity appears to require a certain resistance to effect a full development towards a ‘natural outcome,’ which meant Comte’s concept of a mean seen as a ‘regularisation of spontaneous evolution’ in the series of oscillations around a middle line.⁶⁸⁰ In this way, Comte was straddling contemporary theories from the life sciences and mediating different models for an approach that aimed at delimiting a multiplicity of unknown variables which appeared as philosophical problems.

As a philosophical strategy, this sums up an ambition to substitute a scientific relation for a metaphysical relation. Like Saint Simon, Comte also understood philosophy as a synthesis that presided over a human point of view and in this respect he similarly follows the legacy of an 18th century project for a Science of Man. But Comte’s tools are primarily drawn from the new life sciences with the aim of producing a philosophy of superior concepts, against philosophies attributing readymade concepts to an innate source in the human mind. But it is specifically taken up against the contemporary philosophies of consciousness (Cousin) and Comte follows this with a particular line of post-Cartesian epistemology, as differential theories of science as mirror of an approach rooted in mind. Both approaches are therefore look beyond pure sciences that offer non-historical, logical or strictly universal principles. Comte’s distinction notably focuses on the new bio-medical sciences, identified as radically distinct domains progressive overturning any strictly mathematical physics.⁶⁸¹ On this basis, it has been suggested that Comte’s differential theory inaugurates an epistemological tradition in French thought and can be seen as replacing a search for ontological ground with problems attributed to the processes that inform concept formation.⁶⁸² Comte tried to define this both historically and regionally

⁶⁸⁰ Ibid p97-98 cf Pickering p209-210n

⁶⁸¹ Heilbron (1990) pp158

⁶⁸² Canguilhem’s suggestion. See Foucault (1991) p88-89

through taking sciences as a privileged mode of production of knowledge both for development of mind and extending to wider social political discourses.

Cours and the Project for a Positive Philosophy

Comte's *Cours de philosophie positive* is premised on the radicalism of Descartes because historically this marks an epistemological shift away from ancient thought towards the 'real.' Comte also follows the historicism of Condorcet in his claim that "the human minds progress is the progress of the individual mind...a direct evidence of that of a general mind."⁶⁸³ Abstract epistemology, unified as a collective mind, promises a transform intellectual life against an "intellectual anarchy" of his time.⁶⁸⁴ This radical shift marks a difference "between us and them" (meaning ancients and moderns) where "new analytical views" resulted in the symbolic practice of modern science which marks the transformation of representation and the sign.⁶⁸⁵

Cours takes this primary distinction from the modern concept of force, as abstracted from an idea of motion itself, which is its effect. The modern concept gives the understanding of "compound movements," distinguished from the ancient idea of supernatural agency: modern science understood virtual velocities through a mathematical sign that grounds a different cosmological view. But the modern problem is complexity at the limit of what mechanics could establish as abstract laws, the problem of modern mechanics was therefore lack of knowledge. What Comte was tackling therefore was a need for special knowledge to displace this lack which an older idea attributed an 'actual' inertia. Modern mechanics lacked through its failure to define other "inherent forces" evident in the spontaneous activities of "a range of substances up to those at the highest organisation."⁶⁸⁶ Such thinking distinguished the belief that these would be displaced through the future sciences and *Cours* retained this belief as the principle driving its central problematic. With inertia, modern dynamics had the implicit recognition that the principle of

⁶⁸³ Comte (1893) Vol. 1 p3

⁶⁸⁴ Ibid p11

⁶⁸⁵ Ibid p82-83

⁶⁸⁶ Ibid p91

inertia marked the shift to the ‘new language’ of motion,⁶⁸⁷ but this is intimately tied in with a principle of relativity, despite being expressed in Newton’s *Principia* as a law.⁶⁸⁸

The cosmological science described by Galileo incorporates the observer within the ‘essentially’ mathematical approach. For simple observations, inertia appeals to actual concrete phenomena, yet as a law, it presents its profound philosophical problems. While Newton’s third law of dynamics describes a limited reciprocity observable as equal action and reaction, the first law (inertia) is the conceptual tool, whose abstraction is given in its symbolic aspect.⁶⁸⁹ Kant took this principle to ground any observational statement but this meant that, approached empirically, it should be taken as a psychological fact rather than a physical one, a purely inductive principle whose value was that of an interpretation. This was what Galileo interpreted of ‘the great book which lies before our eyes,’ which was written in mathematics.⁶⁹⁰ In Comte’s era, inertia was understood as the relativity that needed a ‘special epistemology.’ To define an inertial frame, or frame of reference, relied on a perspective, idealised in some way, on the aggregate of bodies from which to derive a position of rest. This ideal gave the axiom of knowledge in the relation to the system. Comte’s epistemology aspired to extend a more physiological principle as a form of praxis.

From the Inertial Frame to Re-linking a Series

Cours addressed this as a problem of organic phenomena that followed from the historical dispute between metaphysics and physics. At the start of the 19th century these entered a new positive phase; this meant becoming freed from their relation to the medical arts through a delimited concept of life freed from “metaphysical abstractions.”⁶⁹¹ Following the success of modern dynamics, the new threshold was between inorganic/organic phenomena. But this was merely seen as a regional difference, dependent on domain; as the inorganic sciences were less inter-dependant, simple organic properties of tissues were seen as complexly linked to their

⁶⁸⁷ Ibid p94

⁶⁸⁸ History of the concept of inertia in Whitrow (1950) esp. p96

⁶⁸⁹ Ibid p92-3

⁶⁹⁰ The famous quote from Galileo’s polemical *The Assayer* (Il Saggiatore) (1623) para 24.

⁶⁹¹ Comte (1893) p296

milieu. This indicates a relation that varies as one ascends “the ranks of the organic bodies,” meaning in proportion to the diversity of their functions. Reciprocally, this indicated the power of the organism in modifying its medium which also rose in proportion.⁶⁹²

Cours took the concept of reciprocity as axiomatic for a “truly philosophical” revolution. He credited Bichat with defining how the physiological object can be constrained to regions “proper to living bodies” as made evident through organic functions. However Comte saw Bichat’s concept of life - the ‘sum of functions that resist death’ - as conceptually problematic and potentially irrational.⁶⁹³ Rather he accepted biological existence was premised on an integration, rather than a resistance, and to this end noted that Bichat’s definition suppressed certain elements “necessary to the general idea of life.” Here is the general idea by which *Cours* demonstrates a curious relation to Bichat; he was seen as exemplary in the field of method, but described his definition of life as an incomplete positivism.⁶⁹⁴

This curious split reflects an assessment of the day. It is significant that Comte readily adopted as a more complete definition, one derived from Saint Simon’s friend, the zoologist and naturalist Henri Marie Ducrotay de Blainville. Comte had attended his course in comparative physiology from 1829-1830⁶⁹⁵ and was influenced by de Blainville’s description of life as a ‘double interior movement, general and continuous, of composition and decomposition.’⁶⁹⁶ In his 1822 text *De l’organisation des animaux: ou Principes d’anatomie comparée*, De Blainville described his views on the principle constituents of a science of organised bodies to be studied from the twin perspectives of the static and dynamic. This Comte interpreted as a biology that combined *anatomy* and *physiology* by distinguishing organic forms from other inorganic objects; the *static* observes matter in its combinations, i.e. its structure and the exterior form as the effects of its matter, while the *dynamic* looks to describe processes of composition and accumulations, decompositions and destruction.⁶⁹⁷ De Blainville’s biology was therefore describing a concept of

⁶⁹² Ibid p299

⁶⁹³ Comte (1893) p298-299 reflects the attitude of his era.

⁶⁹⁴ Ibid p298-299

⁶⁹⁵ Noted by Canguilhem (1994) p237

⁶⁹⁶ De Blainville (1822) Prologomena’ §4 p15-16

⁶⁹⁷ Comte (1893) p302

bodies existing in nature whose differences in duration resulted from a composition of elements which could resist decomposition.

This followed an original idea of the animal series derived the anatomy of Vicq d'Azyr, an idea that took organised bodies as displaying *properties* of binary associations which represented their essential differences from inorganic bodies. What emerged in the series was the display of harmony in the continuity of its existence. From cellular tissue, modified at base, to production of organs as the structures existing in themselves, these were the compositions attributed to a norm of life. Notably, De Blainville was an anatomist and taxonomist and also followed Cuvier in seeing exterior forms as distinct and visible evidence of dynamic results of forces of nature. The combinatory state was a possible state, structurally visible even after the organism's death.⁶⁹⁸

Blainville's resulting synthesis of ideas strongly influenced Comte. The *a priori* concept of harmony between organism and medium indicated the conditions of existence that meant continuity with an environment and understood as a possible state amongst states,-

“necessary harmony...whose unity of subject is one of the chief philosophical beauties of biology.”⁶⁹⁹

This was an aesthetic value that related a strategic value derived from the contemporary natural history as extended to an organic hierarchy. Comte understood the sign to index some undefined principle of unity behind the “combinations within the great diversity of actual modifications.”⁷⁰⁰

In *Cours*, the organic series gives this value to the biological concept, “very like mathematical analysis of the indefinite series.” Biological concepts find their isomorphism with developmental of complexity, to represent its idea in the abstract.⁷⁰¹

As a philosophical position, Comte related this principle in life to a principle of knowledge. His ambition was to define the limits of what human knowledge could attain in a cosmological sense which was his transcendental aspect. He equated this with a double interior series, mirroring two

⁶⁹⁸ De Blainville (1822) p ix- xii

⁶⁹⁹ Comte (1893) p302

⁷⁰⁰ Ibid p308

⁷⁰¹ Ibid p312

principle branches of natural philosophy - astronomy and biology - because these represented two types of motion, which delimited the virtual trajectories within knowledge against which a creative mind could expect to develop its praxis. The philosophical justification for this reasoning was the historical evidence of force behind ancient theological notions that related the vital to the celestial. Comte upheld this as a rudimentary 'method' yet he followed it as a productive relation in considering it as 'positive force' "at the source of knowledge."⁷⁰² It was a positive source driving modern knowledge which gained power through more positive concepts extended as intellectual habits.

Comte's real theoretical problem is the mediation of different epistemological strategies dealing with the difficulty of the biological object. This is exemplified in his relations to the biology of Lamarck and its organic series that traces movements between identity and difference. Lamarck followed a strategy of recomposition, of re-linking a series of ideas in the continuous image of its transformation, a strategy that drew on a general concept of nature, which was metaphysical, but understood as a necessary 'fabulation' for extending conceptual unity to an evident whole. Comte, in turn, saw the strategy justified although outmoded as a metaphysics of nature. Lamarck's metaphysics was no longer relevant for the start of the 19th century as the metaphysical struggles within later biology and a general theory of classifications which Positivism adopts was the "last battleground" between the old philosophies and the new. But the organic series was the concept by which Lamarck succeeded in the terms of his day; it was a zone of fabulation and conceptual synthesis that Positivism would subject to a transcendental mediation.

Likewise, Comte also recognised as premature any definitive shift from a general anatomy given through a modern taxonomy. Here, he was also following the Museum debates which was the reason why in *Cours*, a taxonomic biology was seen as a source of ideas of relations between organs and functions. But Comte saw this under a tendency "to fall into a state of antiscientific admiration when they find that the conditions and the fulfillment coincide."⁷⁰³ It was the relapse into crude empiricism, open to barren and irrational reaction, evidence of older theological

⁷⁰² Ibid p319- 322

⁷⁰³ Ibid p327

influences, which the Positivist project moved against. However the evaluation of a true synthesis of biological concepts harnessing a productive source upheld a necessity of “scientific fictions” for imagining organisms and the ideas of organisation which were “incontestably superior.” This latter aspect reflects the prerequisite of Comte’s transformism as a legacy of the sciences of the revolutionary era.⁷⁰⁴

The legacy was of productive recombination and synthesis of transcendental ideas. The value Comte ascribed to his positive method indicates why Bichat’s triumph was seen as his general anatomy, the exemplary success identified as “rationally reconnecting the normal condition with a notion derived from the pathological.”⁷⁰⁵ Bichat delimited on evidence the tissues and re-linked them to the distinct functions in the organs of the body. Comte took its success as the production of a dynamic concept which can penetrate “the essential web of every organism.”⁷⁰⁶ Bichat’s regional approach to phenomena was an exemplary analysis of indistinctness, “the sole basis of vegetable and perhaps lower animal organisation.” The decomposition into distinct and separate units Comte calls a ‘biotaxy’ which precedes a general coordination of the series and its extensions towards synthesising a logic of life. It therefore stood as a suitable method of ‘natural’ division for Positive philosophy.⁷⁰⁷ Comte’s identified this as an exemplary method but had a selective appreciation of Bichat which avoided the lingering problematic in his concept of life.

Biotaxic Philosophy: Anatomical Events and Biological Norms

The organic paradigm was derived from an objective application of thought following the perpetually increasing complexity; this expressed an inherent logic implied of a biological series. It was a conceptual source of the ‘figures’ of action, its philosophical value extended beyond any strictly scientific knowledge since the latter was susceptible to perpetual modification. But conceptual justification for the biological analogue was idealistic in a similar way to a physiological norm. This was why Comte was looking for a figure or sign of a norm which is,-

⁷⁰⁴ Ibid p328

⁷⁰⁵ Ibid p332

⁷⁰⁶ An approach associated with De Blainville. Ibid p337

⁷⁰⁷ Ibid p341

“perfectly analogous to the development of the individual, at least in its ascending period,”⁷⁰⁸

This is the reason why, compared to Lamarck, Comte discussed how Cuvier could uphold the idea of an organic hierarchy only in an “imperfect way.” Since for Lamarck, the primary problem was the representation of the whole, envisaging the ‘idea of the series’ preceding the ‘idea of species.’ Although both were dependant on observations of identity and difference, the universal series for Lamarck was premised on a continuity of function in the thought of the whole – the series is itself an image of ascendancy. Comte imagined a long determinate succession of organic states, as the visibly productive aspect that facilitates a limited transcendental thought for a general discourse. As visible ground of “real natural law,” this was what Comte was looking to regulate from a particular philosophical perspective.⁷⁰⁹

When Comte claimed that Lamarck showed “by far the profounder conception of the organic hierarchy,” and that Cuvier misconceived it,⁷¹⁰ it is a comment that is instructive of Comte’s ambition. This is quite independent of the specific opinions on permanence or variation of living species which divide Lamarck and Cuvier. Comte’s argument was that reading the series in relation to a general knowledge, rather than its particularity as a science, supported a form of knowledge to which Comte has a philosophical commitment. However he was scientifically dismissive of Lamarck’s transformism, objecting to the division by anatomical elements rather than its particular functions, and equally the “immeasurable” time aspired to by biological transformism was a problem on the grounds that even an initial disparity would be corrected by a “laws of the fundamental equilibrium.” Although Comte grounded himself through De Blainville’ organic stability,⁷¹¹ scientifically it was Cuvier who he saw following the method premised on the equivalence between species in the abstract, namely the ‘biotaxic unit’ which was an idea that conformed to Comte’s idea of the biological analogue whose abstract characteristics embodied the criticality of a modern science. However, it is Lamarck’s method that carries the speculative idea of nature and which lends its philosophical commitment for

⁷⁰⁸ Ibid p342-343

⁷⁰⁹ Ibid p343 Canguilhem describes Comte as a man of the 18th century who happened to be in the 19th century. Canguilhem (1988) p94

⁷¹⁰ Comte (1893) p343

⁷¹¹ Ibid p344

Comte in that it necessitates governing “the passage from the abstract to the concrete.” Here is a practical aspect of implementing the significance that reciprocally could maintain the stability of modern discourse in the face of a regressive metaphysics. Both Lamarck and Comte shared the fight to which strategically biological concepts support a broader task. This also explains why it is the ascending differential orders of organic and animal functions that give the modality its philosophical potential which Comte wanted to extend as conceptual possibility.⁷¹²

Modes of Action: Vital Science and Biological History

Comte’s philosophy followed this bio-dualism as an idea-sign with a dialectical history. The analytic and synthetic traced out as a struggle between vitalism and mechanism gave his philosophy its strategy of integrating possibilities of mapping the vital state in general. It followed an analytic, “from the impulse given by Descartes,” to school of Boerhave, against a synthetic activity evident in the school of Stahl, which Comte considered the most scientific formulation of a metaphysical dimension to a general physiology. The emerging idea apprehended in the transformation from Van Helmont’s ‘archeus’, to Stahl’s ‘soul’, to Barthez ‘vital principle,’ represents “sound philosophising;” it lacked only “for want of the requisite practice” which what Bichat’s substitution of properties for forces introduced. This is the event where a physiological heritage intersects with modern anatomical studies, opening the ‘mapping’ of the vital to the Positivist enterprise.⁷¹³

Comte was following the ambition of transforming a spurious psychology through a confrontation that focused on a positive “theory of sensations” traced back to the brain. This was a domain as yet in the grip of the ‘metaphysicians.’⁷¹⁴ To extend positively a positive concept of vital ‘modes of action’ meant, for Comte, a relation between animal function to intellectual and moral phenomena, the higher functions of the ‘human.’ In this context, ‘human’ distinguished itself from the animal order, which constituted Comte’s strategy of convergence with the older

⁷¹² Ibid p347

⁷¹³ Ibid p354-359

⁷¹⁴ Ibid p372

Science of Man which he dubbed ‘the noblest scientific notion.’ This was a philosophical alignment with certain socio-political ambitions, an ambition to effect a,-

“...a transformation which can safely be considered as possible only by transferring to the whole species, or at least society, the primitive end which in most cases of animals, is limited to the individual or at the utmost the family.”⁷¹⁵

This idea represents a capacity, between an intellectual ideal and evident animality, which Positivism looked to integrate a metaphysics of morals. A recurrent theme for Comte was a perspective on human life as a dormant intelligence which appears intermittently evident against its animal disposition. The latter had spontaneous, impulsive and energetic qualities that needed directing, less the rational animal than an affective animal, whose positive aspects had a power to synthesis higher functions if formally realised. The disciplinary task was of transcending the brute; this meant the transformation of the ego. Comte’s strategy to realise this capacity could now be attributed to biological existence.

What is clear is that Comte’s biological capacity always retained a certain cosmological perspective in its conception. Biological being was both cosmic and vital. Immersed in history, it emerged between the principle of inertia and a universal affinity which aimed to displace animality over a biological horizon. As the transcendental horizon of an ego, it had moral attributes that radically departed from the ‘innate’ Scholastic categories attributed to faculties of memory, imagination and their norms of judgement. Comte was looking for functions that appear only as degrees of the wider notion of organic phenomenon. These were “necessarily variable,” and a “proportionate activity” that Comte was following in the search for a modern episteme with a particular historical departure from Cartesian thought.⁷¹⁶

This history that retained a notion of artifice and modal separation which can be seen as derived from certain extension of Condillac’s sign.⁷¹⁷ On the one hand, the sign was the tool from which to formalise a transformation of the ego and its frivolity; on the other, it was to introduce a radical scepticism which is the ethic that transforms the moral aspects of Positivism. This

⁷¹⁵ Ibid p368-369

⁷¹⁶ Ibid p386

⁷¹⁷ Foucault describes this strategy that holds as positivity, a certain critical aspect which leaves discourse on man “as a truth both reduced and promised.” Foucault (1970) p320

Positivism, following Comte's ambition, embodies a 'paradox' derived from Descartes; of science formalised against the 'old philosophy' in which Comte invested certain values derived from the limited physiological knowledge of his era, which was inherently tied to the legacy of a Science of Man. When Comte took these up as scientific values against those who, in his opinion, intended to maintain the older doctrine as a particular form of metaphysics, the positive spirit meant a long philosophical struggle from Plato onwards; in his own time, this was identifies against the latest manifestations of 'interior observation.'⁷¹⁸ Against this thinking, a certain scepticism operated to effect the separation prior to a transformation opening a new and more positive domain.

Comte attributed to Bichat the possibilities of such a domain from the science of the body substituting for a metaphysics man. Bichat offered an exemplary transformation through his 'special reasoning,' an epistemological shift positively unfolding the organic source. When Comte looked to such 'special reasoning' it was to transcend an intermittent or discontinuous character in animal life. The body displayed activities made into repetitious habits which can be "sufficiently prolonged at suitable intervals."⁷¹⁹ This intermittent character contrasted with the continuous nature of the organic phenomena. But animality was also seen as progressively absorbing discontinuous sensations to effect the continuous organic functions of living being and this gave an image of habituated repetition that grounded an organic base. Comte took the concept of organic transformation of voluntary acts into involuntary tendencies as animal habits brought into the "remarkable regularity" of the inorganic world. The body becomes like them, 'periodical' from the cosmological perspective - "the theory of habit is a sort of appendix to the that of intermittence, and like it, due to Bichat." This comment indicates the relevance of Bichat's anatomy for Comte as a promise of mapping the wider domain of vital phenomena.⁷²⁰

⁷¹⁸ This would refers to the scientific legacy that Plato praises of Hippocrates in *Phaedrus* 270 B-D

⁷¹⁹ Comte (1893) p376

⁷²⁰ Ibid p337

Positivism's New Axiom

The Science of Man left the legacy that Comte was looking to substitute with a social physics or sociology. The epistemological model was based in Descartes but Comte saw that as an incomplete system of positive philosophy.⁷²¹ It no longer followed a Condillac's *Logic* in the relation of synthetic character of a 'special reasoning,' and downplayed Bichat's radical opposition, 'the sum of forces that oppose death,' in favour of de Blainville's biological equilibrium, a 'double continuous movement' of composition and decomposition. Comte needed a model of continuity, of extending a harmonious whole, and the grand historical survey of science in *Cours* could further identify Joseph Victor Broussais seen as uncovering a scientific medicine,-

“The luminous maxim of M Broussais which lies at the foundation of medical philosophy – that the pathological state is merely the prolongation of the phenomena of the normal state, beyond the ordinary limits of variation – has never been duly applied to intellectual and moral phenomena: yet it is impossible to understand anything of the different kinds of madness if they are not examined on this principle.”⁷²²

However, this prolongation was already something of a compromise for Comte. The particular circumstances of this comment should be framed by his aim of mediating between the 'metaphysicians' (i.e the psychologists) and Franz Joseph Gall, (the “illustrious Gall”). It is significant that this section appears in *Cours* towards the end of the section on biological science, and immediately prior Comte introduces the discussion of social sciences. Broussais appears in the text as introducing a degree of theoretical purposiveness to Comte's thinking.

By the 1820's Broussais was making an impact as the reformer of medicine with a new doctrine that presented a 'physiological medicine.' Commentators have noted how this made a *tabula rasa* of what preceded him, but some took this doctrine as the future of science and Comte was among them.⁷²³ Broussais was proposing a new physiology liberated from a subservience to

⁷²¹ Ibid p378

⁷²² Ibid p393-395

⁷²³ “the new messiah had appeared” Ackerknecht (1967) p62. Canguilhem also notes that Broussais doctrine was the medical equivalent of 1789 Canguilhem (1994) p134

visible anatomy; the specific aim was to avoid the pathological point of view favoured by Bichat and the necessity of individual interpretation. Broussais developed a 'systematic physiology' to downplay aspects of visibility in favour of a new theoretical base. Of this new doctrine he could declare, "the moment has come where we must tear away the veil..."⁷²⁴ This intended to separate physiology from the "abstraction of words" around vital properties, the *vis medicatrix*, which he claimed 'painted' abstractions of the human intellect. Broussais also claimed that "such a method of philosophising may succeed in politics or diplomacy, is not always applicable to medicine." His task was therefore to "protect medicine from the dangers that threaten her by means of the philosophical sect."⁷²⁵ In this way, Broussais saw himself definitively breaking with the line of figurative philosophy from Condillac, Cabanis, Destutt, whom he considered belonged with the 'reveries of the ontologist' who,-

"proclaim that the Science of Man, such as they conceive it to be, alone has any pretensions to certainty; without having passed even ten years of their life in studying man as a physicians, or knowing him, considered in his organs, living and dead, they think that the external observations of the grown man, is sufficient to explain all the phenomena of the embryo, the infant and the diseased, the deformed and the dead, submitted to anatomical analysis."⁷²⁶

To this end, Broussais delimited his new physiological domain by a method where vital signs were interpreted as excitations and irritations indexing external or internal stimuli. Such an excitatory domain no longer regarded disease as a foreign element, it was a deliberately anti-ontological theory now giving significance to changes in function, as lack or excess. He succeeded in displacing a concept of disease as an independent entity, giving physiological specificity to change in function which was recognised as a significant event in the appreciation of disease and the new basis from which to attribute the possibility of founding modern scientific medicine. This was notably recognised by the famed French neurologist and professor of anatomical pathology, Jean-Martin Charcot.⁷²⁷

⁷²⁴ Broussais *On Irritation and Madness* Preface, in Caplan (1981) p358.

⁷²⁵ Ibid p356

⁷²⁶ Ibid p359

⁷²⁷ Jean-Martin Charcot (1825-1893) is noted in Ackerknect (1967) p68-69

Broussais has also been described as holding this doctrine as an “instrument of warfare.”⁷²⁸ In this respect, the similarity of Broussais to Comte is instructive; Broussais’s polemic was aimed at the ontologists of the medical world as Comte was fighting the ontologists of the philosophical world. This appears to have suited Comte as Broussais systematic physiology was introduced in opposition to a physiology of observation. From this followed certain consequences, notably those outlined by Georges Canguilhem.⁷²⁹ But it was not the medical consequences of Broussais theory that seemed to have struck Comte but his sound positive method that produced the model he was looking to extend,-

“The only eminent example known to me of sound hypothesis in biology is M. Broussais in proposing the mucous membrane or the alimentary canal as the seat of the so called essential fevers. Whether he was mistaken or not is not the question. His hypothesising being open to unquestionable confirmation or subversion, it gave a great impulse to the study of pathology in a positive manner and it will stand in the history of the human mind, as the first example of a spontaneous introduction of a sound hypothetical method into the positive study of living beings, a method derived from the regions of astronomy.”⁷³⁰

This cosmological aspect follows an axiom that can be traced to what Broussais lacked in basic conceptions of thresholds of biological systems. He conceived as directly correlating in a continuous domain of excitations, the twin influences of environment and brain. The ensuing difficulty was in distinguishing qualitative effects from quantitative differences. The consequence was that this distinguished itself from the earlier therapeutic medicines that relied on interpretations through doctrines of pleasure and pain. Canguilhem has described this as embedded in Broussais’ doctrinaire motivation against Bichat. It can primarily traced to the reception of *Reserches physiologiques sur la vie et la Mort* which distinguishes relations between physics and physiology as continuous and discontinuous phenomena.⁷³¹ But, as Canguilhem points out, this was succeeded by Bichat’s *Anatomie Générale* which he saw as setting ‘a trap’ it offering the systematic possibility of extending qualitative variations in tissue activity from the zero degree of intensity towards a whole organism. To see Bichat as an attempt

⁷²⁸ Ibid p75-76

⁷²⁹ Canguilhem (1989) p42, p47

⁷³⁰ Comte (1893) p319-320

⁷³¹ Bichat (1827) 1:7 §1

to coordinate physiology as a physics, motivated by delimiting pathological variation in tissues, suggests the idea that all physical alteration should be considered phenomenal and significant.⁷³²

The weight of his doctrine gave Comte's later perspective in *System of Positive Politics* where a discourse on man has been withdrawn from the 'metaphysicians' of inner sensation,⁷³³ There are two curious points that Comte carried forward into social thinking; firstly, that he should formalise a systematic from the doctrine of Broussais who specifically differentiates his practice as physiological in a narrow sense. And secondly, that he retains the concept of milieu, taken as a space for differentiating structure and composition, whose parallels is with Lamarck's image of nature despite Comte already identifying this as metaphysical. But without these two aspects, Comte's Positivism and its possibilities of a progressive transformation, would not be possible. It points to the fact that Comte had recognised biology as preserving something of a metaphysical spirit over the inorganic sciences since that each living being always emanates from another living being.⁷³⁴ This suppressed perspective makes clear why Comte seems to have been no difficulty in taking ideas attributed to concrete biological structures, to inform a structural realm of a social and political task. It was an era of transcendental thinking which lacked prior separation in constructing its domains of knowledge.

Comte's historical perspective followed his strategic aims of mediating a future between crude mechanisms and a scientific practice. Against metaphysical notions, he extended a notion of the 'conditions of existence' from biological being and the highest expression of this bio-dualism extended to a new discipline of sociology.⁷³⁵ This opposed both an extension of strict logic and simple reflections of phenomena in a mind grasping at essences. What is significant, however, is that Comte had rejected Bichat's theory of death: this followed De Blainville in thinking that death did not seem to be a necessity for explaining the structures produced by living entities. He wrote in his *System of Positive Politics* that a theory of death "although founded on a theory of

⁷³² Bichat's *Anatomie Générale* is cited on p62 of *The Normal and the Pathological* as relating to Broussais' model of disease that coincided exactly with the model of health "from which they differed only in intensity." Canguilhem (1989) p49

⁷³³ Comte (1893) p375

⁷³⁴ Lévy-Bruhl notes Comte is "feeling the strength and import of Lamarck's labours" Lévy-Bruhl (1903) p181

⁷³⁵ Canguilhem writes, "the matter/life dualism was the positivist equivalent of the metaphysical dualism as extension and thought" Canguilhem (1994) p243

life is entirely distinct from it,” demonstrating the extent to which a structural thinking penetrates Comte’s ideas.⁷³⁶ Comte’s transcendentalism broaches a totality of experience through a historical mind projecting conditions of experience over historical time. His sociology retains this strategically to explain why ‘becoming conscious’ of intellectual properties gave him a history of the ‘human’ as a ‘rarefication’.⁷³⁷

This took a perspective from the old project of a Science of Man which Comte implemented with a radicality self-consciously drawn from the new biological sciences. The paradox that this embodied a shift from ‘absolute knowledge’ to a relative one, as *Cours* had indicated, and meant that its transcendental knowledge was to be displaced progressively as the legacy of a metaphysics. But Comte actually extends a particular model of intelligibility (characterised by the ‘Broussais effect,’) in which science was seen as a practice and knowledge “still in its infancy.”⁷³⁸ It had a polemical dimension that stood as future promise which merely fed an inner logic driving an emerging technological society in the 19th century.

Conclusion

This chapter showed the limits of Bichat’s ambition for a rational physiology. Within its limit, Bichat retained heuristic values of medical vitalism as the practical application of the idea-sign. Physiology was not an apodictic science but linked to a practical task of extending the idea of life as a practical concept. Bichat’s vitalism equivocated the status of physiology as an extended doctrine on the nature of man and left a devalued Science of Man described here through Saint Simon’s pragmatic response; his Positivism was a synthesis supporting the socio-political crisis ensuing in the wake of Empire. By contrast, Auguste Comte pursued an ambition to extend biological discourses as driving a historical process in the transformation of the metaphysics of nature.

Comte’s ethico-moral project had the transcendental ambition for a domain coextensive with an idea of nature. But the chapter showed the unresolved metaphysics carried over into the early

⁷³⁶ Comte (1851) vol. 1, p584 cf Lévy-Bruhl (1903)

⁷³⁷ Comte (1893) p354-8, Lévy-Bruhl (1903) p 347

⁷³⁸ Lévy-Bruhl comments on Comte thought of the future sciences. Lévy-Bruhl (1903)p355

19th century furthered the spirit of the idea as a philosophical concept of life. In a way fundamentally distinct from Kant, this extended biological sciences over a discourse on man. Comte's was the reforming project driven by science that eclipsed the practices of Bichat's generation. This chapter showed how the discipline of the idea-sign served to limit equivocal relations between the vital and the positive. After the mid 19th century, the experimental medicine of Claude Bernard defined an independent domain for physiological science separated from a philosophical concept of life. The last chapter will look at how Bernard's epistemology re-orientated the perspective on a historical Science of Man in France at the turn of the 20th century.

Chapter 5: The Concept of the Positive: Organic and Critical

Introduction

The early decades of 19th century saw a dissolution of the unified project for a Science of Man of the revolutionary era. Bichat represented the limit of ideological use of physiology in this project. But after 1870, French philosophy of the Third Republic recognised Claude Bernard's experimentalism as introducing a new paradigm for physiology, clearly distinguishing between determinable scientific knowledge and what constituted a medical practice. It represents the break in apprehending 'true function' in the study of the living. But there is also a paradoxical link between this new experimentalism and Bichat's observational practice. This chapter examines how François Magendie approached the delicate nature of experimental procedures by constituting a new phenomenology of living function. Subsequently Bernard's experimental medicine gave this as the paradigm for an autonomous physiology, separated from philosophical ideas of life.

The link is paradoxical because physiology's autonomous domain suppressed ideal notions of normal and pathological states, re-orienting these from within. It distinguished only certain functions of life, namely those upheld under controlled 'conditions of existence.' Laboratory medicine was the radical science that distinguished functions of the living from historical ideas of life, such as an ambiguous legacy in Bichat's vitalism. But this radical separation was also understood as following in a line of empiricism from Aristotle: a phenomenology that describes a dynamic categorical schema as a concept of nature; this retains a link in Bichat's experimentalism. From this perspective that the chapter shows how Henri Bergson could claim that the significance of Bernard was to integrate values held of nature as an activity of the intellect, in his estimation a vital orientating function of the intellect. In a late essay he described Bernard's 'anticipative idea' as the experimentalist's disposition which was a necessary counterpart to a 'suppression' of vitalism. Both Bergson and Bernard looked to follow precise methods. This chapter shows how Bergson's delimits a new vitalism in a distinction between a 'norm' and a 'real' through a temporal order. But this was precisely to confront contemporary

Positivists in the wider context of an evolutionary paradigm where the problem of normal and pathological took on the perspective of true or false divergence. Bergson carried deeper implications of the physical and the moral behind this extended critique of Positivist historical formations which pointed back to disputes within a Science of Man.

The question of whether Bernard's physiological domain could serve a 'new way to a Science of Man' also appears behind the rationalising model of Emile Durkheim's sociology. Having demonstrated a paradoxical link between Bichat's experimentalism and Bernard's interior milieu, the chapter looks at how Durkheim broke with historical ideas of man by substituting 'conditions of existence' of modern life on the evidence of loosening of rigid metaphysics of the past. This indicates the alterity within social logic. But social formations historically showed an evident lack of objectivity although supporting a collective order of things. Conversely, social logic remained open to the intervention by a 'special reasoning,' a possibility of substitution that presupposes a potential for autonomy. This grounds Durkheim's account of a capacity to invest with positively grounded norms. He equally presupposes an individual's capacity for fluid forms of intelligibility studied through deregulation or anomie. Did Durkheim's neo-positivism follow Bernard's break with vitalism?

This informs a reading of what Durkheim relates to a social system of signs. Earlier epochs protected this as a theological idea and later expanded into a philosophical project, this chapter shows Durkheim associated this with the project for Science of Man at the start of the 19th century. Its ambition was to re-evaluate a socio-political domain according to a special physiology of sensation. But Durkheim's real dilemma can be identified in following this as a vital problem of 'norms' in modern societies. What concept sustains the socio-political world in the absence of any knowledge of the normal type? Durkheim's perspective on an Enlightenment Science of Man follows its ambition of apprehending organic laws, which if properly interpreted, "can tell us the secret of the future." It demonstrates that in the early years of the 20th century the positive and the vital remained open fields of study, open to a rarefication.

Positivism's New Models of Thought

During the 19th century, Positivism diversified through various models of intelligibility. In the preceding genealogy, the systematic legacy of Broussais was one model that was identified as the doctrine offered a physiological *tabula rasa* shown to have particular consequences for the Positivism of Comte. Epistemological studies of George Canguilhem and Michel Foucault saw Broussais represent an inversion of the observational practices of medical ideologues and its idea-sign. By subordinating its empirical principle to the axiomatic of localisation there unfolded a positivist domain of the sign. Foucault has described the medical consequences of such a practice as delimiting a physiology of ideas; by circumnavigating the methodical vitalism, which Bichat engaged with around normal and pathological anatomy, this reduced the body to a continuous domain in which “disease exists in space before it exists for sight.” The wider significance was for the “structure of experience which dominated the 19th century, and to a certain extent the twentieth...”⁷³⁹ By systematising a ‘way to see’ *a priori* such Positivism gave the medical gaze a status as new transcendental domain. When medical discourse substituted for a Science of Man, it was through displacing the use of idea-sign in the sense used in Bichat’s generation.⁷⁴⁰ Georges Canguilhem goes further to describing this as offering a return to an older philosophy, “almost as old as life itself,” where “a transcendental ideal of the Positivist eschatology was extended through Comte’s Sociology.”⁷⁴¹

Secondly, a quite different Positivism appeared with Saint Simon. August Comte called him a “depraved juggler.”⁷⁴² Starting from the practices associated with the life sciences, this form of Positivism effected its departure from the Ideological project under an awareness of the shifting process of representation during the epoch. The divergence within scientific knowledge, particularly the life sciences during this era, meant a Science of Man could no longer ground itself therein. It therefore adopted a modified form of practice necessary to maintain what was understood as inherent values. What Emile Durkheim credits Saint-Simon with is the pursuit of

⁷³⁹ Foucault (1975) p188, p191

⁷⁴⁰ Foucault (1970) p318-321

⁷⁴¹ Canguilhem (1994) p247-248,

⁷⁴² “the morbid liason of my early youth with the depraved juggler.” Comte (1851) II preface xv, xvi, cf Durkheim (1959) p144

a synthetic knowledge in the face of an unrealisable scientific project.⁷⁴³ It meant a crucial break with Encyclopaedia writers of the 18th century, as well as Cabanis' generation of Ideologues who sustained their project by the possibilities of a new science. What Saint-Simon realised was a Science of Man had dissipated as a project under the diverging nature of positive science; but this left an equivocation at the avant-garde of knowledge.⁷⁴⁴ From the perspective of a Science of Man, he read this a looming crisis. This is where Durkheim finds Saint-Simon's strongest invocation of what the task and vision is for a Positive philosophy; it is no longer limited to the systematisation of existing sciences but was redirected into developing a synthetic knowledge to be implemented from a practical perspective. Whereas Comte prioritised theory, Saint-Simon substituted the functional concept for a theoretical Science of Man. Functional extended to conflicting discourses over moral, religious and political belief. According to Durkheim, this was the aim to "liberate the body of ideas on which the social structure should rest," namely liberated from the limits of science.⁷⁴⁵ He saw Saint Simon's form of Positivism as grounding itself in this practical necessity prior to unfolding a synthetic knowledge at this limit.

Thirdly, following the dispersion of the unified physiological basis for the Science of Man, a new possibility emerges through the contemporary experiences of the life sciences. Henri Bergson described this as a 'certain idea of nature' and gave its interpretive operation as the central problem for his *Creative Evolution*. But it centred on a discussion of modern scientific intelligibility and he criticised contemporary Positivism for having failed to truly apprehend its 'scientific object.'⁷⁴⁶ Bergson's text aimed to make evident as an essential activity of science the condensation from a theory of life into a theory of knowledge.⁷⁴⁷ A few years later Bergson could express this in a more compact way in an essay called 'The philosophy of Claude Bernard.' Here he related that "nothing is more false than the conception of how synthesis works."⁷⁴⁸ Synthesis was always "something problematic," yet Claude Bernard was credited with retaining this problem through his stand against vitalism. Bergson's own focus on the life

⁷⁴³ This is the thesis of Durkheim in *Socialism* but also Ansart (1970) intro p9

⁷⁴⁴ Durkheim (1959) p130, 132, 134

⁷⁴⁵ Ibid p134

⁷⁴⁶ Bergson (2002) p205,

⁷⁴⁷ Bergson (1944) xxiii-xxv,

⁷⁴⁸ Bergson, (2002) p205

sciences was seen through the productive aspect of a ‘certain idea of order’ attained between two ideas, the logic of man and a logic of nature. He made a weighty claim of Bernard; only twice in the history of modern science has “the spirit of invention retired within itself, to analyse itself and thus to determine the general conditions of scientific discovery.”⁷⁴⁹ According to Bergson, these conditions produce two distinct formalisations; firstly the abstract science of Descartes, and secondly, the advent of a method associated in experimental medicine. In both cases there was a confluence of two orders of problems which he characterises an intersection of ‘a certain idea.’ He identified Bernard’s form of Positivism with its precursor, François Magendie. Yet Bergson’s fidelity appears to come from a completely opposite perspective, namely one he associated with a particular idea of vitalism. What constitutes the positive and the vital in the new context? To explore this, the chapter will focus on the methodological shift which accompanies the emergence of experimental medicine that occurs in the years between Xavier Bichat and François Magendie.

Physiology itself saw little actually change during these years, neither in techniques nor in vital concepts. There was, however, a marked shift in the approach to problems of observation and their interpretations which was subsumed under the central problem characterised as the pathological perspective of Bichat. Previous chapters described this as central to the differentiation which limits visible knowledge of physiological objects. It was also characterised in Bichat’s self-awareness in focusing on coordinating observations and interpretations which was seen as central to a methodology derived from his idea of vitalism. A subsequent shift led to the distinction between medical practice and scientific knowledge but by focussing on this methodology, the chapter demonstrates the paradoxical continuity within the status of its discourse.⁷⁵⁰

Ideology, Vitalism and Function in Bichat and Magendie

Following the years of Xavier Bichat’s frenetic work, François Magendie’s physiology represents both a break and a shift that further separated physiology from the Enlightenment understanding of the discipline. Yet Magendie’s physiology emerges precisely from the circles in

⁷⁴⁹ Ibid p201

⁷⁵⁰ Refers to Albury (1977) p47

which Bichat taught. He began training in 1799 in surgery under Alexis Boyer, a student of Pierre Desault and his formal medical studies were completed in 1801 at the Ecole de Médecine de Paris. This meant that Magendie was one of the first generation to emerge from the reformed institutions in the wake of revolution and, as a consequence, he had both clinical and practical experience. Magendie's attention during this time was focussed on similar concerns to earlier physiological projects. His earliest text, from around 1809, was *Quelque idées generals sur les phénomènes particuliers aux corps vivans*, expressed the opinion that physiology did not yet deserve to be classed with the positive sciences. This follows in the long line of physiologists looking for a principle which could organise movements by which bodies decompose and recompose, or explain their actions and reactions. Such a principle intended to account for the means by which living parts coordinated function through the disparate phenomena of vital bodies.

Following from Bichat's tissue theory, Magendie was looking to the nutritive exchanges that could ground such vital phenomena, ideally achieved at a molecular level.⁷⁵¹ Crucially, Magendie was unimpressed by the elaboration of tissue properties, particularly for their implications at the animal level; "it is a great mistake to admit vital properties which are particular to certain parts of organised bodies." He identified that this relied overly on a historical doctrine, and was not actually based on observation and offered this new suggestion, -

"Suppressing the two vital properties known as animal sensibility and animal contractility, and consider them functions instead, would be a most advantageous reform to accomplish in physiology; then there would be a single manner of explaining the phenomena of life and the study of science would be much easier."⁷⁵²

This, in fact, overlaps with the later reflections of Bichat who was also considering the difficulties of observing functional relations at animal level. Observing expressions of vital force in the organised body depended on apprehending something directly. To this end, Magendie focussed on an assemblage of organic parts, to be delimited as the apparatus of particular function. For example, sensation was the function of nerve assemblage, digestion the result of

⁷⁵¹ Magendie *Quelque idées* cf Albury p109, p111

⁷⁵² Ibid p114

digestive organs. This he understood to be following the new way of classification in the living machine.⁷⁵³ It also reflected his primary concern for the discipline of observation; Magendie wrote that, “it would perhaps be advantageous to begin the study of physiology at the instant when the phenomena of living things become appreciable to our senses.” But in this respect, he was also following Bichat’s ambition to foreground an ‘event of the senses,’ in line with Harvey, down through Haller. The primary difference was from the limited anatomical data that Bichat was analysing, and his approach to interpreting a dynamical schema to be integrated as a rational synthesis into a functioning whole.⁷⁵⁴

In 1816 Magendie, wrote a textbook *Précis élémentaire de physiologie* in which he laid out the principles for the new physiological discipline. This reads like a well trodden path of positivist thinking; physiology had to dispense with its metaphysical tendencies with which it had “a long and tiresome romance” and like chemistry and physics, needed to be “reduced entirely to experiment.”⁷⁵⁵ This may have been a radical call among those of positivist disposition in 1816, but it was not at all clearly defined what this meant. Comte had not yet met Saint Simon, and the clinics only just starting to reverberate under Broussais’ polemics. At this time, the notable rival to Bichat’s physiology was Anthelme Richerand whose *Elémens de Physiologie*, first published in 1801, explicitly followed along the lines of Haller’s physiological model, rather than his anatomy. It is instructive that Richerand’s textbook appeared in successive publications into the 1820’s to become influential for Comte despite Comte’s ambition for the metaphysical aspects of science to be expelled.⁷⁵⁶

Magendie also retained an idea of the physiological model set forth by “modern metaphysicians.” This meant the idea that phenomena constituting a human intellect were only modifications of the faculty of perception and man’s instincts could be related to his condition of

⁷⁵³ Magendie’s notes warns the reader that ‘life’ for the physiologists of the day meant either “an imaginary being, the sole principle of all the functions which living bodies exhibit; or with others, it means the “assemblage of these functions”, the sense in which Bichat uses it.” Bichat means to say, writes Magendie, “Life is the assemblage of functions that resists death,” although the difference in emphasis should be noted. He then proceeds to question the circular logic of the phrase. Bichat (1827) p10

⁷⁵⁴ Magendie *Quelque idées* appendix to Albury (1977) p114

⁷⁵⁵ Magendie (1844) Preface

⁷⁵⁶ Ackerknecht (1967) p71

existence. Primarily this meant an animal function, but secondly it was also a function of a “state of civil society.” Magendie’s early interest was therefore to delimit the sign of these empirical tendencies. This was the, -

“desire to have a very vivid consciousness of our existence; a feeling which the more it is indulged in the more difficult it is to satisfy because our sensations become weakened by habit.....shall we say with Bichat that the passions reside in the organic life.”⁷⁵⁷

Magendie’s *Précis* therefore, echoes the particular commitments which he relates to the discussions of sensibility, memory, judgment. Magendie proceeds, -

“however this may be, the study of understanding does not at present constitute an essential part of physiology. The science especially devoted to this, is called Ideology. Those who wish to study this interesting subject, *in extensio*, must consult with the works of Bacon, Locke, Condillac, Cabanis, and especially the excellent works of M. Destutt de Tracy, entitled ‘Elements of Ideology.’ We shall at present confine ourselves to some of the fundamental principles of that science. The innumerable phenomena that constitute the human intellect are only modifications of the faculty of perception [sensibilité]. If they are attentively examined, this truth will be easily acknowledged, which is fully set forth by modern metaphysicians.”⁷⁵⁸

The point is that, although Magendie expresses doubt over the doctrine of vital properties, he had not yet drawn fully apart from the physiology committed to a ‘scientific’ concept of ideology.

While condemning phrenology as a pseudo science, Magendie was specifically focusing on a relation between sensations and motions. This relation preceded the distinction between the “cry or native voice” and “the acquired voice, or voice properly called so.” The acquired voice, comments Magendie, is a learned habit whose higher development presupposes a state of social existence. This marked a direct continuity with the subject of his doctoral thesis which explored the physiology of the tongue, a study derived from his ongoing interest in the relations between the physical and the moral. To this end, Magendie was also considering movements of expressive gestures (‘gestes’) as an intimate connection to the corporeal organisation of habit. Habit was “to motions, what cry is to the voice;” and seen to appear either as acquired habits or as social gestures. Magendie was still following Cabanis’ anthropological thinking, even to the

⁷⁵⁷ Magendie (1844) p155-156.

⁷⁵⁸ Ibid p147, see also Temkin (1946) p321.

extent of limiting Bichat's notion of passion to internal sensations which he proposed was seated exclusively in the organic life.⁷⁵⁹

There was, perhaps, the methodological legacy of Condillac's idea-sign, an analytical tradition inherently opposed to systematic thinking but which the Directoire years lent, as an idea, to philosophy, physiology, medicine and politics to be built anew on a reliable positive edifice of a rational analytic knowledge. One can say that Magendie retained this as a relation to an open tradition and his *Précis* seemingly had no need to define a definite seat to expressive 'gestes,' since phenomena of internal sensation could be attributed either to the combined actions of the nervous system or to the brain by the analogy of an acquired voice.⁷⁶⁰ Such a task would come with the future science.

After 1816, in the wake of the Empire with its ensuing social chaos, a systematising turn appears to have favoured a certain aspect of Bichat's legacy. This aspect lent itself to a systematic approach rather than the provisional approach that depended on experimentation. From Magendie's copious notes to the edition of *Recherches physiologique* that he edited, one must conclude that Bichat appeared to him as a systematiser. Magendie's Positivism, by contrast, aimed at remaining strictly with the analytic tradition, intended to maintain a particular commitment to the discipline under the observational approach and its method for 'natural' synthesis. But notably this was departing from the Ideologue legacy which gave the terms of a future general science, a unified reason to which the provisional knowledge was subordinate. In this sense, Magendie was also influenced by the generation who, like Saint Simon, increasingly saw such an ambition as lacking in credibility. When he abandoned this specific aspect of the revolutionary sciences, however, it opened a path to a new and limited form of medical positivism.

Following 1830 and the July Revolution, Broussais came to represent the new medical point of view, while Cabanis and Bichat were receding into historical memory. From the perspective of a Science of Man, Magendie appears as both the link and break with the thought derived from the

⁷⁵⁹ Albury (1977)p87

⁷⁶⁰ Magendie (1844) p157 (*Précis*, I p232 f), see also Temkin (1946)p323- 324

physiological project which informed his youth. This project has been characterised by an analytic method which prioritised a ‘certain idea.’ But it has also been shown to derive from a particular interpretation of vitalism in its relation to the physiological object. While Magendie properly represents a shift in explanation from vitalism of properties towards force of function, function meant an expalntion of the power of combined organic activities similar to what Bichat earlier attributed to a resistance. By analogy, Magendie was looking to account for this power in an organisms nutritive activity,-

“If it were possible at this time to prove that all phenomena of living bodies can be related to nutrition or action, these phenomena can be regarded as produced by the same force.”⁷⁶¹

By a continuity in the idea of force, Magendie could move away from the status which vital properties held for the 18th century and the age of the Montpellier. This had served a medical doctrine of sensibility and sensation aiming to account for qualitative differences in the whole. A study of function prioritised distinct anatomical divisions as equivalence of function which related to distinct demonstrable activities, evident observable relations of force, between internal parts. This gave the basis on which the new physiology was being reconfigured.

This also represents a ‘paradoxical link’ between Magendie and Cuvier’s comparative anatomy which belies Cuvier’s opposition to vivisection.⁷⁶² Both shared an approach to classification based on function intended to displace an older analogical thinking by which the old anatomy equivocated the visible evidence with a vital idea of properties.⁷⁶³ Like Cuvier and his comparative anatomy, as early as 1809 Magendie was looking for a ‘true function.’ -

“If, for preceding reasons, we do not classify animal sensibility among the vital properties, how shall we consider it? As a true function. A function is the common end of the action of a certain number of organs.”⁷⁶⁴

The question is whether this was significantly different from Bichat at this time. In a series of influential lectures of 1801-1802 he also informed his listeners that “one organ alone does not

⁷⁶¹ Magendie *Quelque idées*, appendix to Albury (1977), p111

⁷⁶² Albury (1977) p89.

⁷⁶³ Foucault (1970) p263-280

⁷⁶⁴ Magendie *Quelque idées*, appendix to Albury (1977), p114

carry out a function; a function is the result of the labour of several organs.”⁷⁶⁵ Bichat it seems was also concerned how in the past, descriptive anatomy served as a topography for use by both surgeons and artists. He acknowledged as progressive the study of the assemblage of several organs that contributed to function; he noted that “Citizens Cuvier and Dumeril” were now classifying according to function,⁷⁶⁶ and even announced that “I shall follow by the same procedure, it is the only one which can be adopted in our present state of knowledge.”⁷⁶⁷ This served as an advance on theoretical problems inherited from the Montpellier doctrine as transmitted perhaps via the anatomist Felix Vicq d’Azyr or from physician Theophile Bordeu. The latter, for example, emphasised that autonomous elementary parts of the living body were a, “...kind of separate machine, which contributes in its fashion to the general life of the body.”⁷⁶⁸ Bichat’s analytic physiology took organs as composites of tissues in which certain properties gave a practical system of descriptive anatomy. It had implied a basis from which the study of physiological function could proceed.

The historical ambiguity is whether this was offering an axiomatic for methodological recomposition of properties, or merely stood as a pragmatic guide to more general interpretation of function. In this respect, one can take it that when Bichat wrote that tissue composites were “the first steps in the study of the functions,” it was understood as a contribution towards a new general physiology.⁷⁶⁹ Without abandoning this ambition, Magendie moved beyond the doctrine of sensibility and took this as the starting point for an analysis. In deferring properties to the more abstract notion of nutritive activity, he subsumed the notion of function to a concept in itself.⁷⁷⁰

A general concept of function was dependent was on the ‘conditions of existence’ and displaced sensibility from the physiological base. But left to general circumstances, what *a priori* could put the function into play. A more general idea, therefore, precedes a description of organs, and

⁷⁶⁵ Ackerknecht (1967) also cited in Albury (1977) p123n

⁷⁶⁶ Bichat(1834)cf Albury (1977) p89

⁷⁶⁷ Ibid p89

⁷⁶⁸ Bordeu *Reserche Anatomique* cf Albury (1977) p90

⁷⁶⁹ Bichat (1834) cf Albury (1977) p90

⁷⁷⁰ Magendie (1844) p16-17

substitutes for a sensational field of actions and reactions. By a more abstract notion of function, the 'conditions of existence' lent themselves to be delimited for experimentation, which is represented by the 19th century move away from the hospital and into the laboratory. The experimental approach is characterised by establishing function through delimiting conditions and which no longer relied on the observable properties derived from the vitalistic idea held of the general property of life. Functions attributed to a restricted field of observation, became separated from anatomical deductions attributed to historically given physiological models. With the primacy of function in Magendie and Cuvier, the physiological model of sensation, which was also the source of observational problems, was displaced. Magendie's particular credit was to have opened up new possibilities for a limited experimental field as consequences of withdrawing the physiology of sensation which was also axiomatic for the contemporary Science of Man.

Experimental or Physiological Medicine

François Magendie has a curious relation to Bichat. He both praises him as an 'experimental genius' while working to overcome a doctrinal acceptance of his ideas.⁷⁷¹ For example, when Magendie edited the 4th edition of *Reserche Physiologique sur la vie et la mort* of 1822, he added an introduction which warned against an uncritical approach to Bichat; the accompanying notes criticized Bichat directly from the basis of his own work. From the early 1820's Magendie's publications increasingly make clear that the study of consciousness and ideology was to be separated from his physiology, in favour of the objective study of the nervous system through anatomical, pathological and experimental methods. In the notes to *Reserche Physiologique*, Magendie offered a commentary based his experimental work which he considered to be the more contemporary physiology. Exemplary of what he intends are the comments on Bichat's exploration of the relation between the brain and lungs. When Bichat set out the premise that a reaction of the brain is either made up of sensations or they are influenced by emotion, passion and affection, Magendie intervened in the notes with his own sharp distinction, -

⁷⁷¹ Albury (1977) p47

“These words *passion, emotion, affection* etc have, I know, real differences in the language of metaphysicians; but as a general effect of the sensations which they express is always the same on organic life; and this general effect is what concerns me, and the secondary phenomena are of no importance, I use these words indifferently for one another.”⁷⁷²

This distinction between general concepts and evident primary phenomena coincides with Magendie’s 1822 publishing of his experiments to support the conclusion that dorsal roots of spinal nerves are primarily associated with sensation, and the ventral roots associated with reaction. But in 1823 his work was still following a method of experimental observation that used pathological phenomena identified in the spinal cord prior to delimiting its relation to the brain. In Magendie’s memoirs from 1825, he notes that the observation of cerebro-spinal fluid between the spinal cord and surrounding membranes (the pia mater and the arachnoid) could be an index to new discoveries, even a new axiomatic, if observed in its normal state. Two years later, in 1827, Magendie edited Bichat’s *Traite des Membranes* and held his own findings to contradict those of Bichat who had identified the arachnoid as the serous membrane of the brain and spinal cord. But despite this, Magendie’s methods of delimiting relations through clinical observation and pathological findings were not essentially different from those of Bichat at this point. Even by 1838, when returning to this same problem to further his work on the nervous system, Magendie returned to a clinical pathological method that aimed at delimiting normal variation by using a pathological model to support ideas of excess and deficiency. The model was still the method intended to visibly delimit quantitative variation through pathological alterations, as guide to natural classification, since observational pathology still taught doctors what to see.⁷⁷³

A marked shift in method comes when Magendie returned in 1839 to repeat the original 1822 dorsal root experiments. These results had since been disputed and, upon returning to re-examine the problem, he introduced a different perspective into his observational procedure. What had been thrown into dispute was the value derived of his vivisection; this led Magendie along with his assistant, a young Claude Bernard, to rethink the value of experimental data through the

⁷⁷² Magendie’s notes on Bichat. Bichat (1827) p299n

⁷⁷³ Lesch (1984) p190

difficulty of repeating their own experiments.⁷⁷⁴ This marks the moment that forced him to rethink the delicate nature of experimental procedures and moved experimentation towards being an unambiguous source of facts. Magendie thereby affirmed a new procedure following a careful experimental control of physical conditions in their relation to complex and unpredictable organic phenomena.

A new restricted experimentalism abandoned the pathological view for a limited phenomenology exclusively given to observing living function. The future experimental medicine took affirmation of a function attributed to the living as its new priority and this displaced a general idea of life. This represents a reversal of priority that led Claude Bernard to define a limited domain for a physiology in which to practice ‘experimental determinism.’

Claude Bernard: Defining the New Domain

The new domain of life, that Claude Bernard studied was the inner environment, now distinct from a cosmic environment. It is this distinction of interior milieu led to a new model of intelligibility for the life sciences and separated it from the pathological view. It is significant that Bernard’s *An Introduction to Experimental Medicine*, first published in 1865, proposed to be both following in the tradition of the anatomists while having fully abandoning their presuppositions, namely their concept of life now substituted by a concept of living function, -

“after dissecting cadavers, we must necessarily dissect living beings, to uncover the inner or hidden parts of the organism at work...and without this physiology and indeed a true scientific medicine will remain limited.”⁷⁷⁵

The significance appears in what he distinguished his work from: in this respect, Bernard names Galen as the originator of vivisection but reserves for Magendie the role of making a modern physiology possible as a method of study. He makes no mention of Xavier Bichat.⁷⁷⁶

⁷⁷⁴ The problem of “recurrent sensitivity” Ibid p191-192

⁷⁷⁵ Bernard (1957) p99

⁷⁷⁶ Albury (1977) p47.

Bernard intended to distinguish the modern form in opposition to philosophical physiology on the basis that the latter could only represent ideas of science, but was not a truly scientific practice. Representation could not produce ‘real’ knowledge of nature. Bernard’s distinction opposed philosophical systematising by a reduction and limitation of what could be considered autonomous scientific practice, a distinction made between the limit of a concept and the scientific limit of practice.⁷⁷⁷ The latter prioritised the practical over a formal conceptual limit. Such practical priority intended eliminating delusional effects that became systematised through the empirical reciprocity that followed pseudo-scientific practices. While opening the domain for practice, Bernard had to guard against the empirical delusions extended methodically, and this was done by establishing what scientific facts could be taken as ‘real.’ A determinable domain was therefore defined as the limited space of production within which concepts could be considered scientific.⁷⁷⁸

According to the *Introduction*, the inversion to practical priority had certain consequence for defining a scientific production. Science could be seen as ‘successive’ without being progressive in the way which Auguste Comte’s Positivism aspired to be. Experimental practice guarded against adverse effects of habituated concepts subordinated by a systematic thinking, and Bernard concretely distinguished this from Comte’s philosophy. A philosophical system produces formal limits, held to have an ossifying effect on any experimental practice. Consequently Bernard’s science was deliberately anti-systematic and worked against what he describes as an ‘encysting’ of knowledge.⁷⁷⁹ Bernard’s therefore can be seen as a form of Positivism whose central task was to break with a philosophy of ideas, which he saw extended through Comte’s system. Comte introduced formal conceptual elements (for example prioritising a concept of ‘integration’ rather than ‘resistance’) which had a negative effects on the space of scientific production. Bernard condemned such formal elements as delusional, at worst leading to ideologically encroachment but certainly it was an imposition on the autonomy of scientific thought.

⁷⁷⁷ Bernard (1957) p25

⁷⁷⁸ Ibid p224

⁷⁷⁹ Ibid p223

Although wary of such formal elements, a Cartesian element in Bernard's thought is also evident in its anti-dogmatic sentiment held against problems of empiricism. This follows a rejection of the older physiological legacy, to which the new determinism stood for overcoming the 'querelle des anciens et des modernes' and symbolised in the move from library to laboratory. It serves the distinction from that which Comte was still integrating from historical knowledge but which Bernard understood as other than science. Comte offered a history of the transcendental mind but failed to distinguish between the history of man and a true domain of scientific production. Conversely, the separation also recognises a deeply impersonal aspect of scientific practice - similar to the anti-humanist stance that Comte appears to follow - but Bernard's epistemology now gives this as a confrontation with the formalising obstacle that is the history of the human mind. If the laboratory stands for the tribunal of the 'real,' Bernard now differentiates this from a continuous history of knowledge which is not scientific. A history of knowledge is understood as formalised common sense which Bernard saw as a history of opinion.⁷⁸⁰

In this respect, Bernard put forward his experimental method as the "negation of all systems." Negating individual opinions means substituting them with impersonal and general theories and promises an escape from 'a way of thinking.' This 'way of thinking' pointed to a fatalism,-

"We never act on an essence of natural phenomena but only on the acting cause...this differs from the fatalism on which we cannot act...fatalism assumes that the manifestation of any phenomena is necessary and independent of its conditions, while determinism is the condition necessary to the phenomenon whose manifestation is free."⁷⁸¹

In the opposition of determinism to fatalism appears Bernard's ambitions for a new scientific language, although one pursued in the strictly limited way. If there was a distant relation to Condillac's ambitions for a new language, then Bernard's scientific determinism restricted it phenomenally to a domain controlled by laboratory conditions. Of this domain, Bernard can write "there are only words beyond."⁷⁸² The determinable domain was separated from a zone of

⁷⁸⁰ See discussion in Anne Petit (1987)

⁷⁸¹ Bernard (1957) p219

⁷⁸² Ibid p219

undifferentiated opinions, a sharp distinction which now promised only a limited science but one finally turned towards universality.

What this method rejected in relation to Comte's Positivism was its intention to retain ambitions for a universalising project such as a Science of Man. Bernard dispenses with such a philosophical project for the sake of gaining an autonomous scientific practice. -

“Positivism, like all philosophical systems which it rejects in the name of science...has the fault of being a system. Now to find a truth...men of science needs only to stand face to face with nature and in following experimental medicine, question her with the help of more and more perfect means of investigation. In this case I think that the best philosophical systems consist in not having any.”⁷⁸³

Philosophically separated from the wider ambitions for a Science of Man, Bernard's autonomy now took, as a principle of scientific necessity, standing face to face with 'nature.' He described this as “the sacred fire” of the unknown which accounted for a principle of autonomy upheld as the drive behind experimental practice. It is this drive that moves knowledge towards a new value in the diversity of nature's phenomena.⁷⁸⁴

Separating Experimental Practice Through a Differential Reason

Faced with the diversity of natural phenomena, an autonomous scientific drive produces a dynamic knowledge which Bernard defines around three further points; i) a mental disposition, ii) the recognition of real difference and iii) the separation into a knowledge according to an internalised reason. -

i) Firstly, through this disposition, Bernard accounts for a form of positive measure; it differentiates mental attitudes according to categories of thinking; rationalist, empiricist, experimentalist (characterised by Plato, Aristotle, Magendie). Although this appears not unlike Comte's law of the three stages (the theological, metaphysical and the scientific), Bernard does not present these models as progressive. They are rather different modes of knowledge. In this

⁷⁸³ Ibid p221-222

⁷⁸⁴ Ibid p221

they are trans-historical, appearing in the patterns of human thought, as modes of thinking which lend themselves to conflictual ways of being. It is the difference that Bernard attributed to a necessary driving motor for history.⁷⁸⁵

This modality reinforced Bernard's notion that a historical approach to philosophising was the way of the 'litterateur.' Consequently, he proposed a polemical perspective in approaching history in the active and militant way. This meant the disposition to write history on the selective basis, drawing together elements to make history the springboard for the future science. The emphasis on selective history was an activity distinct from science itself which functioned against an accumulative knowledge. Selective history took scientific 'material' for a conditioning; conditioning was to accord with a "hidden phenomenal form," whose real value was in its task of opposing an unfolded logic rooted only in individual sentiment and opinion.⁷⁸⁶ Scientific 'material' gives history which negates any individual state of mind. To this extent, it differentiated itself both from feeling and reason, which were both negative elements from the perspective of science. Science is inherently fragmentary and its task is contrasted with Comte's project for the science proceeding by an integration of knowledge and serving to ground a Science of Man.

ii) This negative aspect gives the divergent model of knowledge that produces differences in states of mind. But since a general knowledge can no longer be maintained under a unity of privileged reason, Bernard saw his positive ambitions for the restricted form of knowledge retained according to the movement of an "anticipative idea."⁷⁸⁷ The anticipative idea was understood as giving the *a priori* attitude for new practice. It was neither spontaneity nor innateness, but rather accounted for the active production of concepts in the observation of objective phenomena. Bernard pictured this activity as 'injecting' an anticipative idea into the chain of reasoning.

⁷⁸⁵ Bernard. *leçon d'ouverture du cours de médecine* cf Petite (1987) p211

⁷⁸⁶ Bernard (1957)p28

⁷⁸⁷ Ibid p33

The difficulty is the status of Bernard's 'anticipative idea'; it is not 'purely imaginary' but rather a disposition given to positive measure through necessary relations in a phenomenal reality held of the concept of nature. He uses it to characterise a particular and limited form of empiricism through the disposition that precedes a conceptual formalisation. In this respect, the experimental method was understood to extract and transform a particular reason given only through an attitude of mind which correctly defines the parameters of a 'reality' prior to a scientific experience. The concept is open in the face of the experimental event, and functions for the experimenter as a suspension of philosophical judgements: it can constitute the 'real' conditions by positively grounding possibilities for a new determinable concept.⁷⁸⁸ But the determinable concept remains relative to the internal relations of knowledge, as retained as measure against the wider possibilities of their own determination. This is the sense in which the experimentally 'real' was held to exist as "unconscious and relative." By suspending philosophical judgement and being open to a 'special' empiricism, Bernard aims to displace the rationalism that extends into speculative universals (such as essence of matter and spirit, or even inertia). Bernard's special empiricism gave meaning to what he described as the 'sacred fire of research' which can be read as a power of its disposition and attributed to the 'anticipative idea'.⁷⁸⁹

iii) Finally, this process defines the separation which saw experimental determinism opposed to fatalism. While the latter described a discourse conditioned by an internalised reasoning, the former activity was productive of a new formal language whose status is an 'objective synthesis.' But it has a limited perspective that necessarily distinguishes itself from extended determinations, such as historical and philosophical problems like the contingency of the will (Bernard associates these with the problematics in the philosophy of Leibniz).⁷⁹⁰ Experimental determinism distinguished an 'objective synthesis' as that which could not produce negative results in the restricted domain. This was seen by Bernard as the positive 'triumph of the laboratory,' a sharp distinction of a domain free from the unmanageable teleological statements or discussions of freewill. Within the physiological domain, a laboratory practice simply dispensed with any wider argument to give repeatable results under limited condition.

⁷⁸⁸ Ibid p53

⁷⁸⁹ Ibid p221

⁷⁹⁰ Hirst (1979) p34, Cariou (1995) p98.

Conversely it could also be considered positive in its effect of separating what constituted transcendental judgements from concepts emerging in their functional positivity.

The Positive and Vital in Experimental Reasoning: The Internal Limits

Experimental medicine therefore distinguished an internalised domain from what Sensationalist or observational medicine represented through a ‘pure’ Hippocratic medicine. Although the latter, acts “essentially blind,” he understood it to display ‘certain tendencies’ towards experimentalism.⁷⁹¹ Experimental practice aimed at separating out the productive aspects for a physiological knowledge whose domain remained open to enquiry, self-criticism and modification.-

“True science suppresses nothing, but goes on searching and is undisturbed in looking straight at things that it does not understand....In my opinion the true scientific spirit is that whose high aspirations fertilize them and draw them on in search of truths which are still beyond them, but which must not be suppressed, because they have been attacked by a stronger and more delicate philosophical minds. Has this aspiration of the human spirit any end, - will it find its limit? That I cannot know; but meantime as said above, men of science can do no better than to push steadily forward....”⁷⁹²

Medical science, therefore, suppressed a ‘pure’ medicine whose necessity was for giving explanations. The task of science was a ‘push’ to extract from empiricism the elements that could stand *a priori* to verbalisms. Examples of such verbalism could be ‘vital force’ or explanations given to ‘life’ itself, which stood as obstacles or prohibitions to doubt. Scientific knowledge successively penetrates the nature of the living machine and science was itself now meant as this dynamism.

This suppression has a specific target highlighted by the move against the notions of the normal and pathological states. Medicine retains an empirical tendency for discourse rooted in feelings of compassion and morality, an admixture that lent itself both to the *vis medicatrix* of the body

⁷⁹¹ Bernard (1957) p197

⁷⁹² Ibid p223

and extended to religious sentiments. Bernard describes the discourse on normal and pathological states as diverging tendencies that set up the internal dynamics for experimental medicine which marked a departure from a purely empirical form. He identified Hippocrates with initiating the scientific approach through the disposition that stands for an ‘original doubt’ and preceded the medical understanding whose necessity was to dominate and combat nature.

Conversely, Bernard upheld the example of Paracelsus’ as symbolising medicine’s ambition for a universal panacea which was characteristic of an empirical reaction against transcendental dogmas held of expectorant medicine.⁷⁹³ This gave two perspectives that characterised what experimental medicine internalised as a dialectic; this disposition was grounded by the scientific concept which internalised this difference. A differential between states of knowledge was therefore a difference internalised by a mental attitude, now abstracted and removed from an externalised frame by the ‘anticipative idea’.

The *Introduction to the Study of Experimental Medicine* depicts an idea of vitalism as standing for ‘the cheat of words’ which Bernard was looking to overcome this in the name of a radical science promising the open domain of the functional concept.⁷⁹⁴ But living being was also a concept reduced to the ‘organising idea’ of its own nature. This concept drew on the experimental disposition to displace ‘words’ through what its ‘anticipative’ idea could uphold. The ‘anticipative’ idea was therefore a strategy widely recognised as the true ‘leitmotif’ for Bernard’s physiological practice even outside the discipline of physiology. Diverse contemporaries, such as for example philosopher/psychologist Paul Janet and philosopher/historian Felix Ravaisson, understood the ‘anticipative idea’ in terms of that which escaped perceptual experience, yet retained what could stand as potentially ‘real’ conditions.⁷⁹⁵ Such a virtual concept was understood to have given physiology its new approach, now definitively disentangled from a Newtonian epistemology. A new concept of physiology could ultimately defer its own knowledge with respect to an experimental outcome and, as a life

⁷⁹³ Ibid p207

⁷⁹⁴ Ibid p184.

⁷⁹⁵ Noted in Paul Janet’s review of of *An Introduction of Experimental Medicine* in ‘Revue des deux mondes’ (April, 1866) and also Felix Ravaisson *La philosophie de France XiX siècle* (1868), Berthelot *Evolutionnisme et platonisme* (1908) and more. Cariou (1990) p97

science, and this meant relating knowledge to the goal oriented activity whose historical difficulty was specifically in formulating an adequate expression for a determinable science.⁷⁹⁶

While the ‘anticipative idea’ internalised a virtual limit within a conceptual schema of its domain of knowledge, the significance for the physiologist was this limit that focussed on the knowledge the body, rather than of ideas. The conception of the ‘anticipative idea’ was therefore not quite a disinterested physics. It retains a form of apperception in its necessity of producing a more effective scientific practice, although separated from an older medical practice, which was understood to retain a positively ‘anthropological’ nature. As the negative element, it is dispersive of particular ideas of order upheld as physiological norms, but serves a historical separation as a method of production of positive concepts.⁷⁹⁷

The ‘anticipative idea’ therefore retained the necessity that serves a judgement in the domain of knowledge. Although this was implicitly compacted into a ‘vital principle’ in the earlier physiological discourses, Bernard internalised this as an epistemologically limit by a reversal of priorities. This introduced the point where all *a priori* thinking remains suspect, and from this, Bernard defended the physiological autonomy against any *a priori* subordination to externally conferred ideas on its object. In this sense, his central concern was understood as the delicate nature of producing the positive concept. Bernard was seen primarily as internalising a line of thinking which, like Aristotle, meant privileging relations to the phenomenal aspects of life prior to any discourse. This was Henri Bergson’s understanding of Bernard’s ‘anticipative idea.’

According to Bergson, Bernard had achieved a suppression of ideal relations between a theory of knowledge and the theory of nature.⁷⁹⁸ For Bergson, he adopted a perspective on physiology’s privileged object that could enabled him to act as if a ‘certain idea’ stepped in; “this idea is not a force, simply a principle of explanation.” When Bergson wrote an essay, ‘The philosophy of Claude Bernard’ following a conference at the College de France of 1913, he described this perspective as exemplary of how “nothing is more false than the conception of how synthesis

⁷⁹⁶ Canguilhem (1989) p206

⁷⁹⁷ Ibid p240

⁷⁹⁸ Canguilhem (1994) p314-315

works.”⁷⁹⁹ The underlying message in Bergson’s reading was that synthesis was “something problematic.” The perspective that Bernard adopted in his stand against vitalism was aimed at determining a ‘certain idea of order,’ and the internalised limit indicated to Bergson precisely the idea of internalising the positive and the vital aspects as a form of measure, and moving beyond a simple separation of the logic of man and a logic of nature.

Henri Bergson: The Problem of Synthesis

Bergson’s own concerns are also such values connected with the positive and the vital. As an ongoing exploration into how synthesis works, he followed this in the relation between the theory of knowledge and a theory of life and saw this as the philosophical problem characteristic of ‘certain idea of order’ that followed. In his era, this was already identified with Bergson when he was proposed for the chair of modern philosophy at the Collège de France in 1899. The psychologist Théodule Ribot commented that the question of synthesis “would substitute for the classical method of the history of systems with a history of problems.”⁸⁰⁰ This seems confirmed when looking at Bergson’s course titles from the years leading up to his *Creative Evolution* of 1908; ‘Sketch for the history of a notion of time in relation to systems’ (1902-1903), ‘Evolution of the theories of memory’ (1903-1904) ‘Study of the evolution of the problems of freedom.’(1904-1905)⁸⁰¹ The question of synthesis reflected Bergson’s reading of a model of intelligibility he was developing alongside the contemporary life sciences. It reflected on a history of concepts which Bergson approached from a psychological perspective and targeted with a positive metaphysics.

The question of concepts is posed initially around what affective sensations assimilate into positive magnitudes. *Time and Freewill: An Essay on the Immediate Data of Consciousness* gives this as a relation between an intensive sensation, “impregnated with the idea of necessity,” and its extensive thought, and introduced synthesis through an order of succession as duration.⁸⁰² *Matter and Memory* then focused on the sensory-motor problem of habituated actions as

⁷⁹⁹ Bergson (2002) p205

⁸⁰⁰ Ribot cf During (2005)

⁸⁰¹ During (2005)

⁸⁰² Bergson (1960) p217

extended into fictitious conceptual problems.⁸⁰³ In the first chapter of *Creative Evolution*, he articulates concerns specifically as a relation between a theory of life and a theory of knowledge. Crucially this took a physiological expression questioned in its extension to a wider application. The following extended passage indicates how Bergson was considering the problem of synthesis through terms of a physiological idea of decomposition/recomposition. But his emphasis was on the activity of decomposition as described in terms of the bio-energetics of the day, -

“the opposition of two orders of phenomena observed in living tissue, *anagenesis* and *katagenesis*....the role of anagenesis is to raise inferior energies to their own level by assimilating inorganic substances. They *construct* the tissues. On the other hand, the functioning of actual life (excepting, of course assimilation, growth and reproduction) is of the katagenetic order, exhibiting the fall, not the rise, in energy. It is only with these facts of a katagenetic order that physico-chemistry deals – that is, in short, with the dead and not the living. The other kind of facts certainly seem to physico-chemical analysis, even if they are not anagenetic in the proper sense of the word.....To sum up, those who are concerned only with the functional activity of the living being are inclined to believe that physics and chemistry will give us the key to biological processes. They have chiefly to do so as a fact, with phenomena that are repeated continually in the living being, as in a chemical retort. This explains in some measure the mechanistic tendencies of physiology. On the contrary, those whose attention is concentrated on the minute structure of living tissues, on their genesis and evolution, the histologists and embryogenists on the one hand, naturalists on the other, are interested in the retort itself, not merely its contents. They find that this retort creates its own form through a *unique* series of acts, that really constitutes a *history*. Thus the histologists, embryogenists, and naturalists believe far less readily than physiologists in the physico-chemical character of vital actions.”⁸⁰⁴

This passage shows how Bergson was separating active and passive aspects of a determinable knowledge to illustrate a relation to its synthetic production. This division gives two perspectives on living function, as two orders of fact; one order given in conceptual terms of the sciences of

⁸⁰³ Bergson (1988) p16

⁸⁰⁴ Bergson (1944) p40-42

the day (physico-chemical analysis), the other which necessitates an adequate knowledge to be developed (the synthesis explaining biological form). Bergson focused on the latter.

The significance behind this passage becomes apparent when one reads Bergson as reacting to his contemporary, the physiologist Albert Dastre, a well known editor of Claude Bernard's *Leçon sur les phénomènes de la vie communs aux animaux at aux vegetaux*. In Dastre's own writings, *La vie et la mort*, he passed on a rather mechanistic interpretation of Bernard. Despite the many bio-sciences being discussed *Creative Evolution* makes no mention of Bernard's work.⁸⁰⁵ In contrast, Bergson's later essay 'The philosophy of Claude Bernard' emphasised that Bernard introduced a method of analysis which understood a dialogue between mind and nature that could also conceptualise the general conditions of scientific discovery.⁸⁰⁶ The significance can be understood as *Creative Evolution* being critical intervention against a positivist concept of nature. In doing this, it both upheld and extended the differences between the wider physiological ambitions, and with a specific theory he intended to establish, namely a serious domain of enquiry beyond a strictly deterministic science. Bergson pursued this by suggesting an unexplored reciprocity between experimenting and meditating. He also identified this with the particularity of physiological reasoning given in the "qualities of a disposition of mind" as they appear in the distinction between the physiologist and the chemist/physicist in the passage cited above. Only later did he state that it was Bernard who had condensed such a distinction into the conclusion to *Introduction to the Study of Experimental Medicine*. It is precisely the reciprocity between scientific problems and their solutions that Bergson's later essay characterised as a suppressed vitalism.⁸⁰⁷

In the essay he described the vital as a disposition which did not separate observations from their theoretical synthesis by intellectual construct. This was a disposition towards knowledge that followed a continuous integration of emerging significance through a method of upholding a dynamic schema, the 'dialogue between mind and nature.' Both he and Bernard were facing similar empirical problems, although in different contexts; Bernard aimed at delimiting a precise

⁸⁰⁵ Dastre cited Bergson (1944) p41, see also Cariou (1990) p84

⁸⁰⁶ Bergson (2002) p202

⁸⁰⁷ Ibid p204-205

practice for a positive science, Bergson took this disposition as proposing a new philosophy of nature.⁸⁰⁸ The concept of nature is central to Bergson's philosophy through the values carried by the immediacy of experience, and this is similar to that retained through an autonomous principle that Bernard prioritised in his 'anticipative idea.' Bergson, however, thought intuition could be given a positive and functional meaning without being deterministic. He characterised his ambition for studying intuition as "the science that claims to dispense with symbols," although this is not scientific in Bernard's terms.⁸⁰⁹ His intuition preceded the effort of interpretive operations in advance of an intellectual separation and therefore retained its necessarily pre-scientific status, yet Bergson could still insist that this was 'real.' The status of this 'reality' converged with the possibilities which, even within Bernard's parameters, appear as problem of synthesis for particular relations that could be considered as natural or positive expressions.

Bergson noted in his essay that Magendie was specified in Bernard's *Leçons sur les phénomènes de la vie* as the one who 'opened a breach.'⁸¹⁰ This 'breach' was established by bringing an order of physiology and pathology onto the same determinable terrain, making them coextensive. The practice which ensued gave a new physiology. Bergson took this as retrospectively justifying an experimental approach for the new positive science through the knowledge that internalised what the earlier physiology held as a medical necessity, that is, it problematised the vital element. In his critique of psychophysics in *Time and Freewill*, Bergson's argument centred on a relation between two different orders of fact, qualitative and quantitative, and the process preceding their expression. His sharp distinction between these processes saw Bergson value to what Claude Bernard was methodically refusing in his dispute between vitalism and positive function. The continuity with the passage in *Creative Evolution* and the later essay on Bernard is that these texts are looking to examine how oppositions between determinable physiological phenomena and their associated phenomenal equivalence bring into focus the difficult problem of synthesis. Bringing these together as positive and the vital aspects of the problem of life allowed Bergson to follow his wider ambitions through the biology of *Creative Evolution*.

⁸⁰⁸ Gouhier (1980) p88.

⁸⁰⁹ Bergson (2002) p162.

⁸¹⁰ Cariou (1990) p87

The Lessons of Darwinism

Bergson's ambitions for the problem of synthesis follow the wider production of scientific knowledge in particular the developments of contemporary biology in *Creative Evolution*. In chapter one the central problems of biological order are presented as problems of conceptual difference to which Bergson's argument followed the wide arc introduced by the question of synthesis. The strategic division between a deterministic mechanism and *a priori* finalism within the biological domain has a parallel to Bernard's division made between determinism and fatalism. But the strategic importance becomes clear in the final chapter of the book where the argument opens to the wider problems of a knowledge in general. The final chapter of *Creative Evolution* follows a configuration of thought taken up from within contemporary evolutionary debates to address a philosophical question posed of how conclusively a Positivist science can be seen to be separated from its Aristotelian heritage hence there is a critical aspect to this.

Initially the evolutionary argument centres on repetitive adaptations that produce living forms as the response to conditions of existence. But the problem of synthesis now focusses on the production of unexpected forms of living beings that embody an apparent teleological mechanism which bring about an "evolution of future species" which seemingly converge, or become coextensive with, the wider conditions of existence. But *Creative Evolution* does not frame this problem of form in strict terms of a repetition, but of 'replying.' Replying indicates a synthetic activity that equivocates between accident and inner cause, to the dynamic schema of a dialogue. It equates ambiguities of the discussion of active and passive adaptation to interpretations of natural phenomena that account for a convergence of form.⁸¹¹ On the one hand, a passive interpretation was attributed to the Darwinian concept of chance. But another perspective sees a neo-Lamarckism ascribed to an apparently active power attributed to living being.⁸¹²

The latter is a power understood only through a psychological register. In the widest sense, this meant the interpretive value given to an autonomous principle behind evident natural

⁸¹¹ Bergson (1944) p78-79

⁸¹² Barthelemy-Madule (1982) p137-138

development. But Bergson also draws attention to the shortcomings of such an active principle when ascribing it to a ‘somatic envelope’ or given of a ‘germ plasm.’ Such a power was equally characteristic of a much broader notion which he identified with ‘habit,’ and Bergson understood habit as something ‘given.’ The given could therefore stand as a ‘natural disposition’ since it was necessarily contained under a principle of continuity.⁸¹³ The unity of continuity was *a priori* for somatic cells seen as natural relation to what was given. But in this sense, unity was a vital principle that meant “finds its aptitude,” which can equally be taken as the potential attributed to germ plasm in general. In turn, this can also be held as the explanation for what is formally expressed through the germ.

Here was the difficult concept of synthesis for describing terms of natural disposition. It followed from what Bergson characterised as the idea that a theory of knowledge and a theory of life are inseparable. The concept of natural relation is also meant as a necessary relation and, like the limited vitalism, can be understood through its relation to the ‘anticipative idea.’ Bergson’s idea focused on what became excluded from concepts of intellectual equivalence (biological mechanism, predestination, Radical finalism, etc) but encapsulated what constituted conceptual and logical thought as a “vague nebulosity.” These are notions that precede what is actively conceptualised by the intellect. While the examples from biology see Bergson illustrate his thesis of the orientation in ideas is associated through living effort, it is effort which explains life extending “certain powers” as what precedes an understanding.⁸¹⁴ This idea serves the basis for the general theory of synthesis and which stood positively for intuition in his theory of the mind beyond its deterministic aspect.

Bergson’s limited vitalism was therefore approached through this idea of the confluence of positive knowledge with a concept of life. This avoided restrictions attributed to Darwinian biology of passive tendencies to material variation, but nor did he uphold a neo-Lamarckism theory of psychological cause, attributable to a conscious power of an ego.⁸¹⁵ What Bergson was describing as the “depth of effort” was not simply given to ‘will,’ but was something to be

⁸¹³ Bergson (1944) p85-94.

⁸¹⁴ Ibid p xxiii,

⁸¹⁵ Ibid p97

accounted for at the level of function. As a biological function, this was conceptualised as that which “progresses and endures” by which Bergson gave it the sense of the vital. But this was not limited to individuals or single responses, but rather seen on the general level of the conditions of understanding attributed to organised bodies. Function in vital bodies *a priori* presupposes an organising work in their existence. But the presupposition followed the earlier example in *Creative Evolution* of a *katagenetic* schema to which an understanding necessarily attributed its evidence of higher positive function behind organised existence.

In that passage, the *anagenetic* schema raises energy levels by construction. On the other hand, a functioning of actual life is attributed to a *katagenetic* order which exhibits a fall, not the rise, in energy. If the former constitutes the functional sum of organisation itself, it is only as an index to knowledge of organisation, the reality of the organism in itself was not given though this associative principle, but was premised on the dissociative activity *a priori*. Bergson took this as his central thesis; “life does not proceed by association and addition of elements, but by dissociation and division.”⁸¹⁶ He qualified this precisely by describing perception as such an activity that serves to determine objects upon which it can act, by discrimination from those it cannot act on. This is now taken as evidence of the categories of objects whose necessity is indicated by an *a priori* dissociative base developed by a ‘canalising’ vision of the world. Categories are attributed to a sum of “objects avoided;” when *Creative Evolution* puts forward the famous example describing the eye as organ effecting this canalisation, it is seen as material evidence of a mediation between determinable exterior objects and their relation extended to higher animal functions. Ultimately what defines the positive categories is grounded in the concept of organised life.

The central argument in *Creative Evolution* follows this relation between an order of knowledge and a theory of life. Positive values precede an evident synthetic function on the basis of an earlier physiological dissociation, but Bergson had departed from an account of associative functions earlier attributed a sensible soul. By extending his thesis through the modern evolutionary paradigm, and retaining the necessity of selection between a true and a false

⁸¹⁶ Ibid p58, p99, p104

dissociation, he intended to demonstrate how an anticipative temporal intuition gave selection its wider biological function. Function meant differentiating qualitative relations around the ‘fringe’ of the mental activity through attention to which Bergson had already introduced a notion of duration.

The evidence of the dispersion of living forms through the evolutionary paradigm embodies what is held of duration. It accounts for the dispositional function of an anticipative idea which *Creative Evolution* gave as intuition. One must assume that it was for philosophical reasons that the power attributed to this constitutive principle took the discursive form of the *élan vital*. On one level, the problem of synthesis attributed to something similar to Bernard’s anticipative notion of an experimental idea, but extended through a discussion of evolutionary tendency to dispersion, meant the *élan vital* extended well beyond any determinable biological domain. But the relevance rather, does extend to an ambition for a perspective on the Science of Man through its discourse on the physical and the moral. To this end, there is a parallel between a biological perspective of a true or false divergence and what Bergson reintroduced as a psychological problem of the normal and the pathological.

The Normal and the Pathological

Bergson’s theory of the normal and the pathological appeared already in the earlier text of 1896, *Matter and Memory* which focussed on the psychological distinction made between extremes of mental states. It drew heavily on the pathological psychology of Pierre Janet who represented a positivistic approach to the psychology associated with the French Spiritual tradition and the legacy of Maine de Biran. Biran’s approach to the ego was as culmination of, rather as foundational to, a theory of consciousness. But a positivistic theory of self was more directly in debt to Théodule Ribot who had developed a theory of partial memories from within an evolutionary framework to distinguish a hierarchy of mental functions. The hierarchy reflected a psychic order against which adaptive responses could be qualitatively developed.⁸¹⁷ Janet

⁸¹⁷ See Brooks (1998) p 175.

followed this approach to avoid physiological explanations of psychological phenomena on the basis that a physiology of mental apparatus should be deferred as the task of a future science.⁸¹⁸

It was an approach to consciousness premised on the idea that languages and intelligent action, including organic habit and instincts, were signs of a domain of an extended consciousness. The psychic domain indexed a sum of undifferentiated physiological functions as synthesis of sensation in the body that gave elements from which a sense of self was drawn. Consciousness was extensive but not uniform and the psychic domain reflected the multiple states of its composition; from simple sensations, through to composite perceptions, to higher levels of consciousness required for intelligent judgement. Janet's approach to a field of subconscious activity was through a domain of synthetic activity, activity not itself positively defined by a deterministic physiological form, but premised on synthetic activity which "unites more or less numerous given phenomena into new phenomena differing from the elements."⁸¹⁹ What distinguished psychological functions in Janet's theory was an assimilation of elements that required a certain amount of 'psychological force' for an associative synthesis. Drawing on a multiplicity of sensations, this synthesis indicated higher levels of function, while a lack of psychic force resulted in dysfunction and mental illness.

Normal function for Janet was conceived as the balance of interpenetrating diverse psychic states held in an equilibrium to avoid extremes. By an unexplained mental apparatus of association, he made possible a move beyond the problems of simple associationism, since the psychic domain supposed that memory was the function of unconscious partial recollections. When *Matter and Memory* examines Janet's theoretical apparatus it focusses on the selection process of this association seen from the perspective of Bergson's problem of synthesis; "we need to discover how the choice is effected..."⁸²⁰ In this respect, Bergson was delimiting synthesis from its extreme states; dreaming instead of living activity (psychosis), and of immediate acting instead of representing (autonomism).⁸²¹ Bergson saw these primary facts of synthesis giving the

⁸¹⁸ Janet (1901) p154, see Brooks (1998) p180.

⁸¹⁹ Janet (1973) p425 cf Brooks (1998)183

⁸²⁰ Ibid p164

⁸²¹ Bergson (1988) p155

undifferentiated ground of past perceptions, to which an active dissociation necessarily preceded any theory of recognition.

Matter and Memory proposes the synthesis of perception not be seen through simple relations to elements attributed to memory, but given through the effort applied to the dissociation, or a power to differentiate, the “nebulous mass” of past experience,-

“If this perception evokes in turn different memories, it is not by a mechanical adjunction of more and more numerous elements which, while remaining unmoved, it attracts around it, but rather by an expansion of an entire consciousness, which spreading out over a larger area, discovers the fuller detail of its wealth.”⁸²²

This ‘spreading out’ of an undivided order of psychic facts ensures that association can proceed from the perspective of two interpenetrating modes at the extremes of perceptual function; a primary *associations of simplicity* that retrieves direct relations, and a secondary *associations of contiguity* which bring the myriad of coordinate actions along with the first. Dissociation functionally separates these prior to grounding a dynamic schema of possible sensory-motor states which represent the functional distribution within the dynamic limits of degrees of association. Bergson attributes such a distribution to the theory of mental dispositions, or to diverse ‘tones’ of a mental life and its tensions. This indicates a distribution of states of mental vitality but Bergson also identified this with the potential for a much wider domain offering a “whole psychology as yet unmapped,” through an extended proper study of the pathology of associated mental states.⁸²³

In the dynamic work of normal memory, which drew on a historical concept of the mean to explain different shades of mental life, Pathological states defined a difference in kind at the threshold of dysfunction. But since what constituted normal function in the mind was attributed to a concept of “attention to life.” The function of sensory-motor equilibrium followed conditions of existence as mediated by the body and this constitutes Bergson’s dynamic dialogue with the world as adaptive capacity of balancing future and past perceptions. It is this adaptive

⁸²² Ibid p166

⁸²³ Ibid p170

equilibrium of states that indexes a wider sense of reality extending beyond any determinable questions of material or social world.

Bergson in this mapping of 'reality' through mental pathologies, therefore proposes something different from Pierre Janet. For Bergson, it implicated a function directed towards the 'real,' was indicated at the "pointed end of mental life." This placed the central difficulty of the body and its relation to a norm within the living assemblage of sensation and its movements. A positive cerebral pathology aimed to delimit a schema by which brain functioned to banished excess or deficiency of memory. But this was also a schema that correlated with states to be avoided and extended to biological success through its extension to a theory of knowledge of the world. Hence the concept of world appears as the functional result of states avoided, and which the power of life dissociates as the ground of recognition. When *Matter and Memory* developed this as an ontological basis for the nature of duration, a psychic domain complicated the relation of 'norm' and 'real.' From the perspective of the positive source, 'norm' and 'real' comingle or appear coextensive. But these are differentiated in the 'fringe' of pathology of extremes, where a failure of actualised states, which is a failure of knowledge, ultimately is indistinguishable from a death of the body and its world.

The Positive Metaphysics

The reason why Bergson introduced the *élan vital* in *Creative Evolution* can perhaps be seen to follow from what was retrospectively implicated by the essay, 'The philosophy of Claude Bernard.' This states that Bernard does not exclude the 'organising idea' through elaborating an experimental method and Bergson interpreted this as "restoring under another form a vitalism that he was combating."⁸²⁴ As a conceptual tool, *Creative Evolution* condensed this wider philosophical argument into the *élan vital* which demonstrates Bergson's differing needs to those established by the various theoretical models of life given of contemporary scientific concepts. Bernard, not mentioned in *Creative Evolution*, was later credited with successfully avoiding an opposition between the 'mechanist illusion' and the 'vitalist illusion' at the level of

⁸²⁴ Bergson (2002) p95

method. He substituted this problem for a different distinction between a ‘determinism’ and a ‘fatalism’ which Bergson did not dispute was the method demanded of a modern science. In fact, he adopted its ambition to pursue a precise field of knowledge.

However, in grounding his intuitive approach through a synthesis of memory, Bergson reintroduced the ‘fringe’ between such determinism and fatalism. He took these as different modes of knowledge, distinguished between an analytic part of intelligibility and another “more empirical than ‘thoughtful.’”⁸²⁵ In this way, synthesis appeared both compatible with, and even essential to, a scientific concept of life. In the wake of *Matter and Memory*, Bergson articulated his critique of contemporary life sciences through his understanding of Descartes criterion of intelligibility. Descartes intention, he said, was the deepening of human experience rather than following the dream of universal maths which Bergson subsequently took this up through the discussions of *Creative Evolution*. The new biological sciences in the 19th century came in the wake of both laboratory medicine and the impact of Darwinism.

Bergson thesis was that there was no incompatibility between a problematic synthesis and Descartes’ method since the problem was merely one of priority in the execution of method.⁸²⁶ Both Bergson and Bernard aimed at a method of precision by demanding a certain attitude of mind before the object, but Bergson focussed on the adaptation between experience and intelligibility. Following his ambition to develop a wider theory of psychological states was, in his day, associated with the traits to which the spiritualist tradition in the wake of Maine de Biran pursued under a question of the superior faculties of the mind. But in delimiting a positive metaphysics, Bergson was moving towards the convergance of a positivist tradition with the spiritual one around an the extended question of the physical and the moral.⁸²⁷

To this end, Bergson was deliberately distancing his theory of synthesis from a psychological concept of the unconscious, as well as a fully determined material domain.⁸²⁸ Rather than

⁸²⁵ ‘Le Parrallélisme Psycho-Physique et la Métaphysique Positive’, Bergson (1957) II p142-143 (my translation)

⁸²⁶ “are they conserving intelligibility in the same manner?” Ibid p142

⁸²⁷ Bergson answering a criticism of M. Berlot. Ibid p141

⁸²⁷ Ibid p142-143

⁸²⁸ Ibid p142,

describing an unconscious, Bergson delimited a virtual 'milieu' through an inversion of a spiritualist dualism between personal experience and higher thought. This followed his philosophical ambition to exploit the strategic possibilities for thought in correlation with the suppressed element in Bernard. The virtual milieu inserts itself at the extremes of experience where primacy was given to the force of dissociation like a power of the anticipative idea. From Bergson's perspective, this served the problem of synthesis when advancing into the wider domain of the physical and the moral. The psycho-physiological perspective described a necessity of determinism by invoking the positive possibilities of analogical thought for the wider necessities of action: but the virtual milieu upholds the vitalist problematic for an expanded knowledge in the face of new experiences that bear down on consciousness of beings. Two separate doctrines to be reconciled and accorded proper measure. *Matter and Memory* took this as the starting point for an accommodation of interpenetrating psychological states which equally necessitated an indetermination prior to an active constitution of consciousness. Bergson's axiomatic was that both monism and dualism were sterile in themselves, they only become productive at the limits where these two intellectual tendencies touched.

This was Bergson's perspective for a positive metaphysics in which he saw the parallel of a modern struggle for the psycho-biologist looking to distinguish between consciousness and its organic support. Beyond psycho-physical parallelism, positively determinable activities held of actual 'matter' brushes against a vital activities of the mind. *Matter and Memory* circumscribed to the workings of a 'sensory motor schema,' where thinking difference ultimately becomes subordinated to the clarity of a perception. However, *Creative Evolution* took a more general view to confront what he perceived in contemporary Positivists as self styled successors to Descartes. This explains why he followed an extended critique of Positivist historical formations around the project of modern science to confront what Bergson understood as deeper implications around the physical and the moral.

Élan Vital and History as Dissociation

Bergson's positive metaphysics lent itself to a confrontation with Positivism's perspective on the earlier Science of Man. Chapter four of *Creative Evolution* differentiates modes of associative thinking from the perspective of a history of dissociation by which a positive metaphysics relates a life of knowledge to the concept of life, implicitly through the *élan vital*. His history characterises Greek thought as dominated by a "philosophy of ideas," the mode of thought that confounds 'essences' with intentions, but it does describe how effects of thought itself are like an 'animal instinct' moving directly from impressions to 'mental designs' through simple recompositions. But the central criticism of this 'direct mode' of thinking was that it was evident "even today" in what Bergson famously described as the "cinematographical instinct."⁸²⁹

Bergson is therefore formulating a critique of contemporary science as being inadequate with respect to its own positive ambitions. Having invented a modern sign of relation, science retains the tendency to unfold a parallelism which a positive metaphysics intends to oppose. Such inadequacy relates perhaps more to what Auguste Comte characterised in a modern science through the shift from observable genera to determined physical laws. Claude Bernard, in his conceptually limited way, moves from vital functions to physical law which remained significant for Bergson since it inverts the problem of science's practical activity, and restricts its vital interests in relation to the limits of knowledge. But Bernard was not mentioned in *Creative Evolution*. Modern science represents only the break with a simple Aristotelian physics and its inherent concepts of high and low, described in philosophical terms closer to Comte's Positivism.⁸³⁰ Kant's Critique represents the solution of a modern philosophy but Bergson's ambition extends beyond a conditional threshold by abstracting from temporal instants the positive signs for a more vital science.

In this context, Bergson describes how it was the medico-philosophical project of the 18th century that carried over into his era an "incomplete Spinozism or Leibnizism," or a "cramped

⁸²⁹ Bergson (1944) p341-342,

⁸³⁰ Ibid 357ff

Cartesianism.”⁸³¹ If this refers to various manifestations of Positivism and their problematic legacy appearing ideologically trapped, this may be because they fail to move beyond the ambitions of Cabanis’ era on the question of the physical and the moral,-

“What is the physiology and the pathology actually assigned to the ancient question of the relation of the physical and the moral, to a spirit without action, prior the speculations which deliver it to this point, and neglected, in the affirmations of the savants, all this that is not held purely and simply as fact.”⁸³²

This neglected question on the physical and the moral now reappears as Bergson real target. This is what he revisited this through his thesis on duration, his terms of the normal and the pathological, which are associated with a positive metaphysics.

Despite the difficulties attributed to a principle of intuition, and more explicitly the *élan vital*, the wider discussion behind *Creative Evolution* follows this as a strategic ‘science against scientism.’ Intuition, for Bergson did not present dissolution as a negative thesis since it served a modern ambition for offering concepts susceptible to positive verification within an expanded schematic of knowledge. But the wider implications of the synthetic element driving a modern project of the physical and the moral, and expanded the framework of the new order, had particular difficulties extending to a social milieu. Bergson did not directly engage with this for twenty five years after *Creative Evolution* till his last book on *The Two Sources of Morality and Religion*.⁸³³

However, in the typology of psychological states and its theory of synthesis, he did propose a vital attribute in relation to signs. In accounting for the separation of different modes of knowledge, and grounding his critique against a calculated unfolding of a ‘higher reason,’ duration grounded the earlier divergence between the theory of knowledge and a theory of life.⁸³⁴ Here Bergson argued that living experience of succession appeared as a “kind of force” of consciousness, like a theory of force tied to an idea of motion, -

⁸³¹ Ibid p387

⁸³² Bergson (1957) p147, p150

⁸³³ Bergson’s other works can be loosely characterised *Mind/Energy* essays on a deeper consciousness, *Duration and Simultaneity* as the new physics and experience of life, and *Two Sources* as the limits of collective and individual consciousness.

⁸³⁴ Bergson (1944) p365-366

“...the universe unfolds its successive states with a velocity which in regard to my consciousness, is a veritable absolute...why with this particular velocity rather than another?”⁸³⁵

This perspective appears in terms of an internal perspective on what was occluded from the wider dynamic range implicitly existing of other forms of sensibility. The wider difficulties of Bergson’s intuitional knowledge converged under a unified temporal perspective proposed by duration. It was his confrontation with the ‘would be successors to Descartes,’ which for Bergson, meant an artificial and barren unity of the *res cogitans*. Beyond the *res cogitans*, a possible unity of objective experience promised as future science gave its real problem as shortcomings of any present science. Dissociation as an active *a priori* principle, made history appear as “a kind force” pushing intellectual unity into a psychic multiplicity and, one could say, gives the real target in retaining the vitalist method of intelligibility as Bergson’s perspective on the older Science of Man.

Durkheim: The Politics of the Norm

Emile Durkheim also framed his sociology around the ‘ancient question of the relation of the physical and the moral’ assigned to a future science. His starting point was the ‘social physiology’ derived from Auguste Comte and Saint Simon to be grounded as a form of neo-Positivism. But Durkheim identified Saint Simon as the modern response to the fragmentation of the Enlightenment Science of Man and the influential link undertood as providing a general synthesis in the face of ‘dispersion.’ When he wrote about Saint Simon during the 1890’s he described his strategy as the ambition to “liberate the body of ideas on which the social structure should rest;” Durkheim’s own project took this as a problem of symbolic order.⁸³⁶ It gave a perspective on a double articulation; that of an immanent principle of continuity, but also one which could be constituted as a social world. Against the tendency to dispersion, the symbolic order emerged between a ‘way to function’ and a ‘way of being.’ This shares with the earlier social physiology the aim of conceptualising “a certain state of the collective mind,”⁸³⁷ which

⁸³⁵ Ibid p369

⁸³⁶ Durkheim (1959) p134

⁸³⁷ Durkheim (1982) p55,

now meant an account of the social world as an interpenetration of both a real and a rational order of things. It was important that this be determinable for a socio-political formations; to do this Durkheim looked to reconfigure the mediation of the vital and positive aspects of a modern knowledge in the wake of the new models of intelligibility.

The positive sense that Saint-Simon demanded of a general physiology was to give a special epistemology which promised to ground an order of things. But in his era this demanded a necessary synthesis at the avant-garde of any positive knowledge. Durkheim also drew on the life sciences for an epistemology and also found it paradigmatic that there were multiple simultaneous orders of 'natural' knowledge which modern man was faced with and accounted for a dissolution of a transcendental unity.⁸³⁸ Durkheim's sociology promised knowledge of a new domain.-

“Up to the present thinkers were placed before this double alternative; either explain the superior and specific faculties by connecting them to inferior forms of his being, the reason to the senses, or the mind to matter, which is equivalent of denying their specificity; or to attach them to some supra-experiential reality that was postulated but whose existence no observation could establish....beyond the individual as 'finis naturae' is the system of active forces, not nominally or rationally created, a new field opens up.”⁸³⁹

Looking beyond the 'finis naturae,' Durkheim avoided a psychology of the soul by emphasising the alterity of social logic from the individual consciousness. This would "...open a new way to the Science of Man," through the claim that Sociology would bring to consciousness, a conceptual domain of human relations, between the logic of man and a logic of nature.⁸⁴⁰

The main difficulty faced by Durkheim was for delimiting the order of phenomena that could express such a domain and Bernard's physiological epistemology gave the paradigm of the day. This was the experimental method but Durkheim's social field was not open to experimentation and verification in the same way. Laboratory practice gave theoretical control to 19th century physiology where the organic limit of life determined functions of the body in relation to

⁸³⁸ This follows Hirst (1975)

⁸³⁹ Durkheim (2001) p342

⁸⁴⁰ Ibid p342

conditions of living existence. This determined relations between inner and outer milieu; it grounded an experimental science by delimited laboratory conditions. When Durkheim developed his conceptual practice through the attempt to delimit a domain of social facts, it was despite lacking any means of externally determining the limits to a social concept of life. The question is, in what sense could this be seen as scientific?⁸⁴¹ Like Saint Simon, Durkheim was aiming for something closer to a therapeutic ideal rather than a fully determined approach of Bernard. He was moving in an opposite direction to Bernard by a practice of delimiting a domain for interpretation rather than a determination.

Durkheim's Positive Domain

Durkheim had identified in the Ideologist's method the ambition of escaping a purely socio-political problem through a higher intellectual synthesis of a 'way of being.'⁸⁴² While the aim was elevating human activities beyond a reflective thought, Durkheim saw this only upheld according to "some overriding concept" with no concrete justification.⁸⁴³ The method did differentiate values derived of empirical knowledge and did little to reveal inherent problems of a rationalism fed by an analysis of finite knowledge. This, Durkheim understood, as the empirical problems which were inherent in delimiting a social domain. He took this as the central problem which was to be given a new perspective. His new ambition was identifying criterion to be used to distinguish a determinable practice from an ideology. To this end he looked to define what constitutes social facts for an integration into a modern functional approach, -

"Indeed the facts which have provided us with its basis are all ways of functioning; they are physiological in nature. But there are also collective ways of being namely social facts of an anatomical or morphological nature." ⁸⁴⁴

The physiological parallel in these facts is significant since Durkheim was delimiting his social domain through relations between a 'way of being' and a 'way of functioning.' The importance of the double articulation is the principle that underpinned both his sociological science in its specificity, but also opened its relations to wider conditions of life in general. This gave the

⁸⁴¹ Hirst (1975)p115

⁸⁴² Durkheim (1982) p57

⁸⁴³ Ibid p85-87

⁸⁴⁴ Ibidp56-57

modality that appears initially through two approaches to thinking social structures proposed in *The Division of Labour*.

In this text, Durkheim describes two modes of life, the mechanical and organic. These distinguish different expressions of elementary social connections; the simple reflective relations of a mechanical solidarity, and a differentiated multiplicity of complex organic solidarity.⁸⁴⁵

- A disposition to simple realism is limited by the social principles accorded to the overriding collective consciousness. This gives the apparent ‘ways of being’ that both orders a world *a priori* but is also experienced as the ‘fabric’ of a socialised nature. This model of knowledge grounds a functionally replicable and conceptually external order of things.⁸⁴⁶ This is the rationalist model which follows from the classical systematising models, where social structures and health of societies historically given through socio-political formations whose values had the criteria of the mean and limited to an average.

- Beyond this perspective, Durkheim looks to ‘ways of functioning’ given in terms of the interpretative model beyond a simple normative model. When Durkheim assesses social function it is through social effects which could not be exclusively accounted for under a historically given. Since functions “cannot tell us what ends are to be pursued,” a functionalist reading could be related to perceived ‘states of being’ only in a limited way.⁸⁴⁷ Here was the difficulty of the interpretation which necessitated the grounding criteria of a science. In a grounded and coextensive domain of science, “good and evil do not exist;” therefore the question of function must serve both to displace individual opinions, while equally grounding an originating empirical element, for a new language for the sociologist to interpret.

It is the difficulty of this functional element that was developed through Durkheim’s model of organic solidarity. From the organic perspective, the empirical element is beyond direct relations to determined knowledge and social facts are fore-grounded by socially determined formation which both mediate elemental differences while also delimiting the zone that exhibits a functional differentiation. This mediating zone drew together the wider intelligible social

⁸⁴⁵ Durkheim (1984) p84-85

⁸⁴⁶ Ibid p40, p64

⁸⁴⁷ Durkheim (1982)p85

phenomena into the domain of facts under an overriding principle. The question is how did Durkheim address this principle? He looked to Comte who took an underlying notion of ‘impulsion’ to improve conditions, which Durkheim saw as inherently confusing function with “something ascribed as source or essence,” which appeared fundamentally problematic - both philosophically and ideologically. As the basis for Comte’s Positivism in analysing human formations through the historical method, Durkheim described this as maintaining a “truly metaphysical entity.”⁸⁴⁸ He meant a concept of humanity seen to be impelled to surpass an animality, which appears to Durkheim as an inverted ‘psychology’ of the spirit.⁸⁴⁹ By distancing his own method from Comte’s transcendentalism, Durkheim took as the central problem how to delimit an explanation of teleological elements within a realist framework. These were the difficult parameters which he summarises only under a ‘persistence of life;’ which is something regulated through ‘social living.’ In this way, a social domain can distinguished from an individual ‘will’ and make a clear distinction between an individual and general logic.⁸⁵⁰

Durkheim’s ambition for such a positive and determinable domain looked to Bernard’s interior milieu as carrying the new model of intelligibility. The question is whether Durkheim follows the break which Bernard effected with vitalism? An older concept of life could only conceive of the relation between an outer environment and the body through the idea that mediated under a notion of ‘vitality.’ Bernard’s inner milieu instilled a new physiological concept by which the most constant interior environment belonged to the higher forms of life.⁸⁵¹ Bernard’s model took the inner milieu and its homeostasis as distinctive of higher organisms and in offering a freedom to life through more determined inner environments. -

“The constancy of an inner environment is the conditions for a free and independent life...all the vital mechanisms, however varied they may be, have only one purpose, that of maintaining the integrity of the conditions of life within the internal environment.”⁸⁵²

⁸⁴⁸ Ibid p119

⁸⁴⁹ Ibid p121, p126, p133

⁸⁵⁰ Ibid p144 note 4

⁸⁵¹ ‘The Concept of the Organism in Physiology’ Pearlman (2000) p178

⁸⁵² Bernard’s *Phenomena of Life Common to Animals and Plants* cf Pearlman (2000) p178

Bernard's homeostatic function was his overriding concept in defining life: Durkheim looked for a parallel concept at the threshold of free and independent life. Within this, social phenomena were both expressive of function and intelligible as the social facts "in the relation it bears with to some social end." Equally, the causality behind these social facts could be restricted to "antecedent social facts" as criterion demonstrable by social repetition.⁸⁵³ What is made evident by these social formations is strictly neither individual nor general psychology, but something that Durkheim equates with a zone of free and independent life. Such a zone made evident a loosening of the rigid metaphysics and was to substitute for ideological or metaphysical entities that sustained a conceptual 'way of being.'

Powers of Association

Social formations internalise values attributed to the independence of life and Durkheim describes these as subsumed under 'power of association.'⁸⁵⁴ This power explains how a social milieu stands under a constitutive principle and defines its substratum; it is the network of communication that extends through a 'dynamic density' with a potential to communicate across a wide horizon that profoundly modifies the conditions of the collective life.

By following the new model of intelligibility, Durkheim was delimiting this morphology to its own terms. Conscious of avoiding empirical problems (such as Comte's law of the three stages which Durkheim thought "cannot but be empirical."⁸⁵⁵) he demarcated social life as a domain of analysis that aimed to parallel Bernard's rejection of vitalism. What Durkheim was rejecting was any historically given causal notions attributed to nature to be substituted by the social model, -

"if historical evolution is envisaged as being moved by a *vis a tergo* (vital urge) which impels it forward, since a dynamic tendency can only have a single goal, there can only exist one reference point from which to calculate utility or harmfulness of social phenomena"⁸⁵⁶

⁸⁵³ Durkheim (1982) p134

⁸⁵⁴ Ibid p135

⁸⁵⁵ Ibid p139

⁸⁵⁶ Ibid p141

However, having displaced the tendency attributed to the individual and the general will, as an obstacle to thinking a social field, Durkheim accounted for his reference point through the aggregate of functions that conditioned the domain. To this end, he surveys the diverse discourses as functions already identified with two opposing traditions of socio-philosophical theory. -

- Firstly, there is those given to theories which placed a 'nature of man' prior to the social. This he associated with Hobbes and Rousseau which saw the concept of the social as a mechanical artifice which should be subordinated to the idea of man's will; "a machine wholly constructed by the hands of man and which, like all the products of this kind, is only what it is because man wills it, and so an act of volition created it another one transforms it."⁸⁵⁷

- Secondly are theories of natural being which stood against giving primacy to the will. Durkheim considered that these gave the idea ascribed to social life as immanent and spontaneous higher elements of the 'natural language,' whose concept extended to a Science of Man through informing his politics, morality and religious being. This would be closer to the legacy of Condillac and Cabanis.

In such theories were condensed the natural and the artificial concepts of the social, like a dualism and monism, but within a domain restricted by a principle of association, *suis generis*. Durkheim's method aimed at subsuming both the imaginary/mythical idea attributed to humanity, but also notions attributed to a determining will. This was an anti-humanist stance in the sense that described functional activities in the social domain by accordance with the physiological model of function; but was delimited through what were taken as wider needs of an actual social organism. These were attributed to 'real' relations indexed by laws of association. Durkheim defended a functional approach to social structure through attributing these relations to the 'persistence of life;' this stood as the necessary axiom for his social science yet remains dependant on how it was ascribed to the whole. It was therefore caught between a philosophical concept of nature and a scientific domain.

Since the whole was not given, and since he rejected vitalism as explanation, the concept of the life of the whole could never be given in itself. Durkheim reached this difficulty by interpreting

⁸⁵⁷ Ibid p142

his central problem as a sociological organism and following Bernard's strategy. Where the physiological object could be given between two forms of existence, an exterior world and the interior milieu developed against conditions of existence, the sociological whole - which was also a living whole - was confronted with the problem of having no exterior conditions for experimental control. An inner milieu, therefore, also had to stand for its own conditions of existence. Consequently, Durkheim looked within this milieu for a principle of association, something that could fuse both genetic and ontological elements, accounting for both constitutive properties of the whole but also that by which the whole was evidently transformed. Further to this, a principle of association would account both for absorption of differences, while also expressing wider conditions of existence.

However Durkheim's social structures, as described through organic or mechanical solidarities, did presuppose a dynamism in social potential, as force against which its forms could appear. Although excluded from the social domain as elemental phenomena, this principle conditioned evident transformations behind a social fabric by giving a relation to 'nature,' or the 'real'. Hence the theory of association relied upon this principle as something *a priori*, which was neither psychology nor physicality as such, but was, to a degree, expressive of both. This principle accounts for differences socially mediated, while elements in the inner milieu reconstitute this difference through what individuals negotiate through social formations which are given on the basis of past conditions.

To account for what this dynamic expressed in social formations was the real difficulty behind the associative principle. Durkheim explored this in his later texts, *Primitive Classification* and *Elementary Forms of Religious Life*, in the form of a neo-positivist project of mapping out possible origins of associative functions. The aim was to account for an order of classification by comparison of what primitives modes distinguished from the modern, according to an absence. Durkheim took this absence as his perspective on an 'objective synthesis' that grounded historical order.

Science, Social Function and the Positive Cult

Historical order was *a priori* because Durkheim attributes associative function with the positivity of historical practice. He identified a historical realisation of specific differences with the emergence of positive knowledge such as becomes evident with Aristotle's science. This means that positive practice meant, for Durkheim, what determines separate causal relations within general ideas, as made evident by primitive forms of knowledge. Primarily such ideas are characterised by categorisation of the world and is evident behind sympathetic actions or cosmic influences that constitute a primitive knowledge. *Primitive Classification* of 1903, therefore pivots around Aristotle's categorical knowledge; "Aristotle was the first to proclaim the existence and reality of specific difference" and the study of primitive cultures serves to demonstrate how such logical categories have extra-logical origins.⁸⁵⁸ It describes the principle of association operating under fluid relations between heterogeneous intelligible phenomena in giving the hierarchical order of things. But it relates neither strictly to a model of the world nor to the individual minds rather to a "special religious principle." Durkheim and Maus defined this as *suis generis*, the affective values within a concept of the world, which serve to differentiate the social domain.⁸⁵⁹

Social reality was this categorical objectification which *Primitive Classification* tried to demonstrate had originally internalised its positive elements. This was taken as made evident in pre-abstracted analogies appearing in kinship groups. Since kinship confers unified 'intelligibility' seen as a rudimentary canalising of a schematising structure of society, the study of moieties, clans and marriage groups made evident the reciprocating structures of the world that served a collective intelligibility as distributed through an understanding of species and genre. Durkheim and Maus claimed this was an original form of an idea which has a relation to contemporary determinable scientific concepts. Their study differentiates states of knowledge through a 'history of association' where the historical perspective looks beyond strictly contained logical horizons of modern science. Outside these horizons, it aimed to explain a wider function under which concepts of the world could become organised according to 'totemic' centres. This

⁸⁵⁸ Durkheim and Maus (1969) p5, p8

⁸⁵⁹ Ibid p84-85

was a wider perspective on an emerging function that became the mind/matter problem, an ordering principle of the world, now primarily a moral order but also by implication, a socio-political order.

In 1912 *Elementary Forms of Religious Life* grounded a 'history of association' through an unstated emphasis on this wider field. This domain overlapped with the fragmented older Science of Man and took a historical perspective on the emerging epistemology that was the link between *Elementary Forms* and *The Rules*, the advancement described of the 'positive cult.'⁸⁶⁰ The positive cult specifically operates through a sympathetic magic that could produce its own 'ways of being.' Durkheim's claim was that useful effects appeared through ritualistic or social ceremonies which acted as the equivalent of "experimental justification" through demonstrating effects of particular practices. The 'reality' of such practices was not linked to any concrete effects since the specific practices could simply be substituted without having any direct effect on the outcome; but the visible demonstration created the predisposition for belief. Durkheim described this as the channelling of positive expressions, not simply an intellectual process, but of following a predisposition for overcoming inadequacies of human reason through collectively reinforcing propositions that individuals were being asked to accept.-

"The moral efficacy of the rite which is real, creates the belief in its physical efficacy, which is imaginary, the efficacy of the whole leads to the efficacy of each part, taken separately."⁸⁶¹

Durkheim further claimed that there was only a difference in degree between this and the experimental practice of the modern scientist. Laws of science become endowed with the authority of the repeatable experiment, but equally were renounced as soon as evidence to the contrary appears. In this way, by following the theory of association, the mimetic cult describes the positive expression of the law of causality in its pre-scientific manifestation made evident in animism.⁸⁶²

⁸⁶⁰ Durkheim (2001) p243

⁸⁶¹ Ibid p266

⁸⁶² "Philosophers of empiricism have regarded these different conceptions as so many mythical aberrations...but even assuming that they are merely hallucinations we must still account for their genesis." Ibid p269

Here was the power of explanation that could account for cosmic forces in conflict with the individual will. This primary duality gave the concept of causality to express collectively certain forces as objectified feelings. These were necessarily externalised and diffused through space as ‘natural’ powers that opposed those constituted by a subject; in turn, the subject stood as a power with potential of a determining force through the subject’s own physical body. In this way, the power of the individual, as given the potential of soul, was necessarily constituted through the mind/matter opposition. Yet, this was also dependant on a collective understanding of the distribution of force through the concept. In this way, “man feels that he is a soul and consequently a force because he is a social being.”⁸⁶³ The concept of causality is the necessary link made between moments of a force in negotiating the unfolding of events. Extended through the positive cult, this becomes the social concept that offers a wider potential for judgement.

Positive knowledge means mediating ‘naturally.’ It means in the sense evident of collective experience, binding an understanding in advance of any proof, *a priori*. But this principal is not simply a tendency in the individual but is a collectively conditioned norm. The norm is the concept of the mean that stands both as transcendent and external to individual representations. It also stands as a rule to which the subject is subordinated. Durkheim does not intend this to be understood as a mental creation in the sense of an imagination, but as the associative effect, positively developed through participatory rites, which serves a general matrix of social existence. It relates particular activities to actual outcomes at the level of community.-

“The framework goes beyond the material and dominates it...it goes beyond the individual memory; it is above all created to answer the needs of the community.”

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On the perceptual level, community mediates to individual disposition, but on the categorical level this regulates an understanding through the collective ready-made. In the pre-scientific community an ‘order of things’ was open to intervention by the “will of the gods,” a supernatural force that offered a higher potential presupposed of a special reasoning that was distinct from the

⁸⁶³ Ibid p272

⁸⁶⁴ Ibid p274

individual's logic.⁸⁶⁵ Such a special epistemology is what is retained for a positive knowledge of nature to be abstracted by scientific law and appearing to be determined from beyond.

Durkheim's thesis on the pre-scientific forms of positive knowledge is that it operates through primary categorisations of the sacred and the profane. The sacred and profane is grounded as a religious principle but defines a qualitative relationship to the world as it extends through the binary order to predicates a classificatory order. This dualism offers primary judgements on differences in kind. Durkheim saw this judgement as radically exclusive and giving significance that extends throughout the social order through how a principle of force accorded to the 'sacred.'⁸⁶⁶ Equally it acts as a real force for the explanation of the natural world. What becomes evident from Durkheim's study of the totemic principle is that religious origins inform both philosophy and science in their explanations of force distributed throughout the world through physical, moral and material entities.⁸⁶⁷ These distributions,

"both resides in men and is the vital principle of things...they stimulate and discipline consciousness but they also make plants grow and animals reproduce."

The distribution of force informs a matrix from which the "seeds of human civilization were developed."⁸⁶⁸ An individual accords with it as if this law was grounded in nature: social harmony is premised on the equilibrium of forces which accords with a higher moral power. This is experienced as a social realism appearing objectified through relations with external objects sacred to that society. However, Durkheim was also developing the account of socialising logic that operates to explain a dynamic reconfiguration of social formations on the basis of the social function given to a new reality.⁸⁶⁹

Social function was categorically understood to overrule the impressions of the senses while Durkheim's sociology was also looking for an original 'new language.' Behind the historical symbolic languages which *Elementary Forms* gave a perspective on, new types of positive knowledge emerge as social function through what was compacted into the idea of individuated

⁸⁶⁵ Ibid p29

⁸⁶⁶ Ibid p36, p40

⁸⁶⁷ Ibid p141, "Mana is the science of its day" p151, This is an observation that Durkheim attributes to Comte. p152

⁸⁶⁸ Ibid p168

⁸⁶⁹ Ibid p169-174, p180, p181

force. Force was no longer seen as a singular subject but as the function with the potential for autonomy.⁸⁷⁰ Durkheim held autonomy to be internalised or enclosed, like a monadic being, within social formations. Through activities such as the mimetic ritual or scientific experiments, the principle of force could be invested with the norm and positively grounded. Ultimately this serves to regulating relations between the individual and collective survival, but this is now given through the aesthetic side of representation which is subsumed under any rationalisation. When evident new functions appeared, it was through ‘satisfying’ a feeling that negotiates the profane life.⁸⁷¹

In *Elementary Forms* it is the aesthetic question that illustrates Durkheim’s extended theoretical aspect behind social functions. The historical subtext for *Elementary Forms* was a necessity for social transition which was acknowledged as the difficulty of an investment, whether through mimetic ritual or a scientific demonstration, and needs a leap of logic. What informed a theory of knowledge prior to that which both “binds the mind and goes beyond it?” It attributed as a question of aesthetics what could tentatively be reevaluated according to individualised interpretation.⁸⁷²

Dérèglement and Anomie

For Durkheim, the sacred and the profane carry values of the positive and the vital through terms given as an interpretative capacity. He understood this capacity as a ‘natural’ appetite to be satisfied and, as such, is ultimately located within the individual. If the task of the *The Rules* was to restrict a domain to which the sociologist could derive discursive authority, *Elementary Forms* looked to speculative origins of representation for a theory of knowledge that emphasised non-determined power relations for a general knowledge. Its historical image was an extended zone of transformation, of wider, diffuse and vague associations, experienced under an aesthetic

⁸⁷⁰ Ibid p181

⁸⁷¹ Ibid p273-284

⁸⁷² Ibid p269-272, p201

quality, follows a distribution of sensation into which social forms could intervene with a power of constitution.⁸⁷³

What constitutes such a power? It is dominated by the force by which man thinks of himself as master of a body, from the perspective of a soul which divides causes from effects as two moments of force. According to Durkheim, here is the problem which is attributed to empiricism. This could not explain why anticipations in the moments of force could be upheld as a norm with authority over the mind. Durkheim's concept of social force engenders this power of association for imperatives of thought through 'ways of thinking and being' as a concept of social values. This idea embodies categories of causality, both of individual and the body (vital) and the collective ready-made understanding (positive) as the concept extends power to communal life. It expresses positive categories of objects for the wider activities which the intellect must follow, and cannot suppress. For Durkheim, this would be where imperatives of thought and imperative of the will converge in a concept of the mean, attributed to man's world.⁸⁷⁴

As a capacity this drew on more factual studies of Durkheim's earlier works. In *Suicide*, a disposition associated with social dissolution was evident as a loosening norms of modern society, encroaching on man's 'ways of being,' through a 'longing for infinity.'

"It is everlastingly repeated that it is in man's nature to be eternally dissatisfied, constantly to advance, without relief or rest, towards an indefinite goal. The longing for infinity is daily represented as a mark of moral distinction, whereas it can only appear within unregulated consciences which elevate to a rule the lack of rule from which they suffer."⁸⁷⁵

The significance of finitude and lack of rule is given to the 'unregulated conscience' and is the index to changing conditions of life under a social concept that no longer retains consistency. An aesthetic capacity means an individual appetite awakened through less disciplined passions in the state of deregulation or *anomie*.

⁸⁷³ Ibid p271

⁸⁷⁴ Ibid p275

⁸⁷⁵ Durkheim (1970) p257, p253

However, less disciplined passions meant both the divergent and convergent effect within the wider aesthetic capacity; -

- Firstly, from the perspective of the mechanical solidarity such unregulated desire would appear as a lack of rule, *dérèglement*,⁸⁷⁶ or the threat of difference to a symbolising order. An alterity within the order of representation which signifies the looming conditions from which anomie ensues.

-Secondly, from the perspective of the pre-scientific order depicted in *Elementary Forms* the orders of ritual life appeared through the mimetic cult of the totem and stand only for a 'way of interpretation.' Since structures of intelligibility are mediated by the sign, an order of things is only its secondary structure. Symbolic structure supports the aesthetic capacity at the origins of understanding, but is open to the fluid relations from within a collective order.

Fluid forms of intelligibility necessitate the totem to stand for a condensed order of difference and substitute for the distributed order of the world. Indeed, this is the sacred order characterised by a particular epistemological model at the heart of the positive cult. The positive mimetic order functions to reinforce associations between the sign and referent - the idea and its understanding -but this conversely also condenses the potential to profane that order. Since Durkheim held pre-scientific forms of such associations as open relations, fixed to the world only through interpretation, it was this interpretation that was open to experimentation and demonstrable difference: the aesthetic form as dissociated form, open to a transformation.

This implies that such order is a social-epistemological order and ultimately is not determined but merely deterministic. The social concept therefore only 'gives grounds' for an understanding. In this sense, the relation between determinable and determined lends its particular meaning to anomie as a 'way of being' drawn from a specific concept of the world. A Christian theology of *anomia* finds the significance in its translation as sin, not necessarily the willful transgression of norms, but one that indicates mental attitudes which lead to a profaning of the sacred.⁸⁷⁶ In this context, biblical *anomia* meant lawlessness and extended as a moral disposition intended to indicate certain actions which consequentially follow. For example, old Testament gentiles were

⁸⁷⁶ Mestrovic & Brown (1987)

anomic since they did not have mosaic law; equally for Christians, the antichrist was the lawless one since he is outside the law of God.⁸⁷⁷ This shows how anomie carries a sense of hostility against conceptions of God which clearly has difficulty finding a positivistic equivalent. Another perspective appears through the ancient Greek *ἀνομία*, meaning ‘lawless’ or ‘impious,’ which opens a more ambiguous notion for the status of the sign of anomia.⁸⁷⁸ In this sense, *νόμος* is linked to *μοῖρα* (moira), a fatalistic notion held of “that which is right.” Its relation to *νόμος* appears less determined, rather more as the ‘dispensation’ in the sense that Zeus dispensed land to a people for their use. Later this became the dispensation of law accorded to the sovereign. Against such order, a fatalism was retained behind the teleological tension of *νόμος* where the dispensations to rule was derived from a right to represents collective values and to preside over their distribution.

The relation between dispensation of land, of law and the modes of reason was drawn together under a sacred task, and embodies this idea that its mismanagement could be held as sacrilegious. By using anomie in the sense of ‘dérèglement,’ the opposite of *régle*, Durkheim maintained an opposition that gives this tension of a teleological thought of ‘ought.’ This was grounded by the fatalism behind the moral sense of a prescriptive or regimen for a collective general health according to a wider concept of nature.⁸⁷⁹ The suggestion is that Durkheim took anomie as describing the dispersal of collective life and its concept of the world. A modern *dérèglement* in the regime of signs and its moral norms would be indicated by treating society’s sacred representations as profane and vice versa.

While in an earlier epoch these signs had fallen under the protection of the theological, later this was taken up as a philosophical project and became, by the beginning of the 19th century, a regime of signs associated with the pursuit of a Science of Man. These were ambitions followed by the special physiology of sensation and its ambiguous values attributed to the body. When the problem of anomie appears in *The Division of Labour* it still carried some of this physiological legacy with it,-

⁸⁷⁷ Ibid p83

⁸⁷⁸ Liddle Scott

⁸⁷⁹ Mestrovic & Brown p84

“the study of deviant forms will allow us to determine better the conditions for the existence of the normal state...here as elsewhere pathology is the precious ancillary to physiology.”⁸⁸⁰

According to *The Rules* we learn that “physiologist studies the functions of the average organism, so does the sociologist,” but unlike the physiological model the neo-positivistic distinction through function was inherently problematic for sociological model. It could not be a categorical value in any absolute sense of a determined limit to life such as in physiology. It was the central problem for Durkheim’s sociology.⁸⁸¹

Modern societies exhibit only differences of degree rather than pathological difference of kind (i.e. living or not living). Functional diversity contained under an apparent unity which *The Rules* called the ‘persistence of life,’ is scrutinised in *The Division of Labour* through functional and moral diversity of collective sentiment. Durkheim contended that modern dynamic societies become more powerless by degrees to contain their “centrifugal tendencies.” Durkheim drew the socio-political parallel in the equivalent of a philosophy incapable of maintaining the unity in its relation to modern sciences. Modernity was this dynamic of knowledge being always in motion.⁸⁸² Scientific specialisations were occurring at such a speed that “the great syntheses” are always untimely. This problem was of the impossibility for a human intellect to sufficiently grasp any knowledge through its potential to fully develop and deliver the *régle* that Durkheim equated with the project for a Science of Man. *Dérèglement* was dissolution into mere coexistence under the blur of determinable and fatalistic knowledge at the individual level.⁸⁸³

The Concept of the Positive as Science of Co-Existence

Such a dynamism in knowledge has its particular significance which Durkheim registered as a difference between Auguste Comte and Saint Simon. While Comte held that the future unity of the sciences could be assumed, it was Saint Simon who came to doubt this. Disunity appeared as an irreconcilable whole, disruptive of any modern anthropology of collective consciousness. It

⁸⁸⁰ Durkheim (1984) p291, (1982) p92

⁸⁸¹ Durkheim (1982)p105n1

⁸⁸² Durkheim (1959).

⁸⁸³ Durkheim (1984) p298

recedes rapidly as labour and social functions differentiate modern experience, which appeared to Durkheim as a morbidity.

He also understands that this cannot be pathological in itself since apparently different ‘ways of being’ are only dispersed forms of life that could coexist as ‘normal’ phenomena. ‘Ways of being’ appear as repetitions, as “channels that life has dug for itself...”⁸⁸⁴ The specific difficulty was to distinguish these norms from the potential forms awaiting social expression. He read social tensions as the phenomenal events whose problem was in relation to general functions of society. In contrast with the systematic model of Comte’s delimited norms, the general ‘fact’ for Durkheim was that “something suspends hostilities for a while.” However, in the industrial society such general function was the solidarity that appeared only discontinuous or intermittent, ultimately grounded by the state of anomie. Anomie indicates a fatalistic empiricism, which could equally appear as new conditions of existence, part of a process of being realised.

The dilemma for Durkheim’s ambitions of a Science of Man was the links to an ideological method itself attempting to escape from an empirical crisis. However, Durkheim considered ideological judgment as ‘pre-functional,’ meaning that it deferred its own measure to “some overriding concept.”⁸⁸⁵ In contrast, Durkheim was looking forward to a method that would avoid ‘backsliding’ into such ideology, while retaining its ambition for a positive approach. This meant the return to its primary problem of establishing objective criteria for an interpretation of health from disease as values in the world.⁸⁸⁶ From an individual perspective, an organic society was such an admixture with no discrete concept of its world to view ‘mentally;’ individuals could “no longer figure out its limits...since it is so to speak unlimited.”⁸⁸⁷ But the modern dispersion was both the perspective on a crisis of social function but also the evidence of the transformative events whose elements lent themselves to becoming a determinable science.⁸⁸⁸

⁸⁸⁴ Ibid p299, p302-303.

⁸⁸⁵ Ibid p86

⁸⁸⁶ Durkheim (1982) p90-91

⁸⁸⁷ Ibid p305

⁸⁸⁸ Ibid p85

Distinguishing determinable signs of the normal and the pathological was the dilemma of the *a priori* given to such vital ‘norms.’ Durkheim’s strategy deferred this question through the assemblages of sociological ‘entities,’ distinguished from those anomalous to such repetition.⁸⁸⁹ An underlying assumption, from the biological point of view, was that norms were able to be generalised throughout the species. Simple repetition was the phenomenal fact explained by causal thinking. But through social formations, Durkheim justified individual persistence as repetitious forms resistant to destructive historical forces,-

“how would they have been able to sustain themselves in a variety of circumstances if they did not enable the individual to better resist the causes of destruction.”⁸⁹⁰

Repetition was the normality where frequency indicates superiority; but this could explain only static relations to the conditions of existence. On the contrary, in the circumstances of transition that characterise modern social forms, the evolving process was sustained without any stabilised and definite form of the normal type. What distinguished the modern world for Durkheim was that norms always related to the past and could no longer relate to the new emerging conditions of existence. Visible evidence of normality and generality was therefore deceptive in modernity. A visible persistence of force of habit could no longer be the sign inherently linked to contemporary conditions of a collective existence, and this was further defined by the problems distinguishing the sociologist from the biologist: the sociologist remains at a loss to know whether the social phenomena is normal since he ultimately has no means of determining reference points.

In understanding Durkheim’s project, one should note the significance of the text *Socialism* and what he derived from the industrialism taken up by Saint Simon. This was an economic function, taken as an auto-regulation of interests which was distinguished from social controls imposed by mere ideas. Its value appeared despite a “tendency to anarchy,” was a principle Saint Simon related to a dynamism of life. He conceived this in the manner of a vital principle drawing on “a substance of common life.” Durkheim related this dynamism to the tendency for an

⁸⁸⁹ Ibid p93

⁸⁹⁰ Ibid p93

“enfranchisement” of a ‘way of being’ that offered a means to escape subordination of an untimely idea.⁸⁹¹

In this regard, Durkheim notes how Saint Simon never spoke of Plato or Rousseau, rather articulated his thinking by reference to Newton, Cabanis, Bichat and Adam Smith. The significance was that this could fore-ground the search for an immanent principle of distribution: Durkheim continues, -

“To assume that the particular state of subjection in which industry had formerly been held, would not be in agreement with the new conditions of collective life, does not imply that every other type of dependence would be devoid of reason. It could well be that the transformation necessary does not consist in suppressing or subordinating but in changing form, not in making industrial values a kind of unlimited absolute beyond which there is nothing, but rather is limiting in a different manner and spirit than formerly...In fact, it is the general law of living things that needs and appetites are normal only on condition of being controlled. Unlimited need contradicts itself. For need is defined by the goal it aims at, and if unlimited has no goal since there is no limit.”

Durkheim, who was also looking for a socio-political technique for regulating the capacity for development, understood this through the concept given under a ‘persistence of life.’ The counter-example to these techniques appeared in the image of the “hypercivilization” of the *Suicide* text. Here an anomic tendency bred growing suicidal consequences for refined nervous systems of the excessively delicate and those less capable of attachment to collective objectives. These produced the discontinuities evident as the limits of collective forces from the individual perspective. Durkheim interpreted these as the dissolution of former collective powers. This indicates two ambitions; -

-Firstly, to give the provisional concept to be explored through the analysis of two antagonistic forces confronting each other, a collective force that tries to take possession of the individual, the other individual force that repels it.⁸⁹²

⁸⁹¹ Durkheim (1959) p235.

⁸⁹² Durkheim (1970) p319

-Secondly, he retains the ambition for a science whose technique is appropriate to describe the “supra-organic” social life. This ambition would give form to the organic law whose function, if properly interpreted “can tell us the secret of the future.”⁸⁹³

For the individual psychology, such a technique would open a negotiation in the forest of signs that combines diverse psychological dispositions of egoism, altruism with “a certain anomie” to offset one another. The excess of one or other element would be to the detriment of the others, but it is equally the case that a norm of moderate intensity in disposition, such as the average man, would become more rapidly dissolute in the face of the increasing transformations of the industrial society. Perhaps this should be taken as the driving force behind Durkheim’s conception for a Science of Man, a failure he identified as the dissolution in the forces of fatalism waiting on the margins.

Conclusion

This chapter examined the legacy for a Science of Man after experimental medicine separated the science of life from the philosophical debate on man. Physiology internalised values attributed to the vital and the positive within a functional domain. The chapter described Bergson’s incorporation of this event into a historical continuity as the strategic dualism between experience and intelligibility. Bergson’s own theory of psycho-physiological states substituted the normal/pathological dualism for ‘norm’ and ‘real’ extending a broader question of values held of vital function. This served Bergson’s critique of a Positivist historical formations. The chapter described Emile Durkheim neo-positivist model derived of Claude Bernard’s inner milieu. Durkheim’s social domain internalised tensions attributed to the persistence of life. His historical perspective on the order of things was open to a special reasoning, the positive concept, internalising tensions identified with what earlier epochs protected under the notions of the theological. This was associated with an ambition for a Science of Man and its intrinsic dilemma around the problem of determinable norms. Did Durkheim follow Bernard’s break with vitalism? Durkheim’s was an open ambition for the functional concept that addressed the dissolution of the Enlightenment Science of Man in his era.

⁸⁹³ Durkheim (1959)p244

Conclusion: The Vital and the Positive

The thesis derived a contemporary context from Foucault's 'crisis of the 1960' which was contrasted with the 'rarefied form of positivism,' as Deleuze called epistemological analysis. He referenced the empiricist tradition and focussed on what Deleuze' own thought deliberately subjugated under a vitalism. In this thesis, vitalism was explained around the 'age of Bichat' which Deleuze proposed as culmination of the Sensationalist model of the sign. By contrast, Foucault was approached through his engagement with Kant. These were the two perspectives explored as an Enlightenment project that developed alternatively to the model of a critique of reason.

When Foucault discussed the 'age of Bichat' in the *Birth of the Clinic* it gave a perspective on an Enlightenment Science of Man where medical Positivism saw the dissolution of its naive ambition. Gilles Deleuze described this event as the 'delicate problem' of constituting a positive concept from the broader socio-political perspective of intrinsic values of the signs of life. This had a parallel with his interpretation of Nietzsche's genealogy and the signs 'that have yet to take hold.' But the Enlightenment Science of Man was understood through the idea of a science that was the creation of man's higher faculties, this was the ambition of creating new philosophical and scientific languages with a practical application in man's world. While Kant's rational metaphysics divided this ambition on the basis of an 18th century motif of power, he also looked for the 'indispensable service' extending beyond the conditionality of the critical model. This was the alternative followed in the *Opus Postumum* systematically laying out theoretical possibilities of apprehending a science of nature as a logical system of concepts. This gave the perspective from which Kant's late *Anthropology* was a domain where historical knowledge competed with natural science, as the conflict of moral and theoretical aspects of a logic of man, left to be judged by a principle of the future.

The 'age of Bichat' derived of Montpellier vitalism and followed the methodical engagement with what constituted vital phenomena. Bichat was influential for this Science of Man extending to the physical and moral whose micropolitics were influential for a nascent Positivism. Positivism saw this in life's capacity for organization, while vitalism meant the 'hidden operations of nature.' This thesis found what Bichat understood as heuristic values derived of medicine took priority over the specificity of systematic science; the 'age of Bichat' extended this to a reading of Saint Simon when it moved beyond a physiological debate to constitute a pragmatic knowledge for a socio-political domain. Saint Simon's enterprise centred on the aesthetic nature of this domain, with biological theories of animality and 'aboriginal difference' giving its central ontological problems. His 'industrial values' gave expression to man's inner drives as a class struggle and the concept of labour was his Positivism's perspective on values of an Enlightenment Science of Man.

The legacy of Bichat's physiology also put these values into dispute; Comte's Positivism saw an epistemological strategy resisting philosophical interpretations of a Science of Man and Bichat was important because he constrained knowledge to its legitimate domains. But his 'incomplete Positivism' opened to a structural thinking that overtook a broader practice of Science of Man after the 18th century. The new paradigm for knowledge of life appeared with the experimental medicine of Claude Bernard and displaced an older vitalistic understanding of life, affirming functions dependent only on 'conditions of existence.' This gave the 'paradoxical link' with older question of values apprehended as true function during the Third Republic. Following the separation from a philosophy of the life, the rarefied approach was a progressive adaptation between experience and intelligibility, a stance serving Bergson's critique of Positivist historical formations. This precisely returned to a perspective on the normal and the pathological which *Creative Evolution* upheld as a neo-vitalism.

The neo-Positive model in Emile Durkheim also looked to Bernard's interior milieu for a social model for a collective 'order of things.' The values identified with positive signs which earlier epochs protected under a notion of the theological, and later taken up around the philosophical project, gave the perspective for a Science of Man in the 18th century, where it was the loss of the

status of positive knowledge that Durkheim saw as the intrinsic dilemmas of legitimating a vital 'norms' in modern society. It was precisely because the positive and the vital could not be sustained in relation to determinable sciences, social assemblages, or definite knowledge of the normal type that subsumed the positive and the vital under a social concept. At start of the 20th century, this carried this paradoxical link with the Enlightenment project.

What remained of this project was to be constituted from the sciences in the terms of the day. This would reflect Kant's ambitions for a future metaphysics, as well as the historical physiology whose central role in Enlightenment vitalism gave the French perspective on a Science of Man in this thesis. During the 20th century critique of values of humanism, the post-war period focused on the construct of man that followed Enlightenment thought through the 19th century as it fed political arguments of the 20th century. But the anti-humanism and the 'death of man' that emerged through new physical and biological sciences, along with imports to France of phenomenology, emergence of structuralism and linguistics, all served an attack on the stable notion of man as a progressive, oriented, utopian ideal of man.

The genealogy of the Science of Man has followed the constitution of a history that already was a post-Cartesian subject. It constituted a field around the values of positive and vital whose terms were historically resistant to being a determinable object of study. From this perspective, the Science of Man in the Enlightenment was not a simple humanism, but the project which as this history shows at no point gave a clear idea of what man was. The significant aspect for a contemporary thought was of the broader socio-political implementation that was already diverging from a humanism. This study ended prior to the First World War; it started with the 1960's dispute over the humanism - further research would focus the transformation of the positive and the vital through this intervening period from which it emerged for contemporary thought through such influential writers as Foucault and Deleuze.

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