

# Personality

## Two ways of thinking about it

**H**ANS Eysenck was one of the first people to combine what Cronbach (1957) called the two disciplines of scientific psychology – the correlational and the experimental. In this article I'll describe my own correlational and experimental research into the role of confirmatory processing in personality questionnaire responding, and how cognitive styles such as dogmatism influence confirmatory processing. I aim to show why I believe Eysenck was right – the two disciplines need to be unified before psychology becomes a truly scientific paradigm.

### A troubled marriage

When Hans Eysenck did his seminal work on personality (Eysenck, 1947), there was a clear separation between Cyril Burt's London School and Frederick Bartlett's Cambridge School. The London School was interested in individual differences, factor analysis and psychometrics, whereas the Cambridge School was interested in rather narrow experimental designs. When Eysenck suggested that the two sides should work together to produce a unified science, both apparently turned hostile.

Although some early personality theorists had engaged in experimental work, Eysenck was really the first to carry out systematic and programmatic experimental studies of personality. These were guided by his theoretical framework for personality (see Figure 1). This framework led to testable predictions, and Eysenck felt that experimental work was the obvious way to validate his particular theoretical system. He did not feel that factor analysis alone could decide between different personality theories in any definitive fashion; a feeling supported by the existence of a number of different systems, proposing between three and 16 major dimensions of personality (Eysenck, 1991). In his view, proximal consequences were the most important aspect of any theory of personality. If predictions about proximal consequences were verified, this would constitute solid evidence for the theory – evidence of a kind not available to any purely taxonomic theory based simply on factor analysis.



In his Hans Eysenck Lecture, **MARTIN DAVIES** describes how he has continued to integrate the correlational and experimental in the study of personality and cognition.

In his remarks on this subject in the introduction to the Transaction edition (1998) of *Dimensions of Personality*, Eysenck concluded:

*The inevitable marriage between experimental psychology and correlational psychology is as far away as ever. Experimental psychologists simply do not read personality journals, and consequently do not realize how inclusion of individual differences could rescue so much of their work from drowning in the error term. Personality psychologists still wallow in psychometric puddles like the 'Big Five' swamp, and do not see that they must consider wider horizons. (p.xv)*

This is perhaps an overly pessimistic view. Given the scope of the many books, chapters and articles he wrote, I think that Eysenck's work has been and continues to

be a major inspiration to the many people who wish to see a synthesis of the experimental and the correlational in psychological research. This is the aspect of Eysenck's work that I would like to acknowledge.

### Confirmatory bias in personality processing

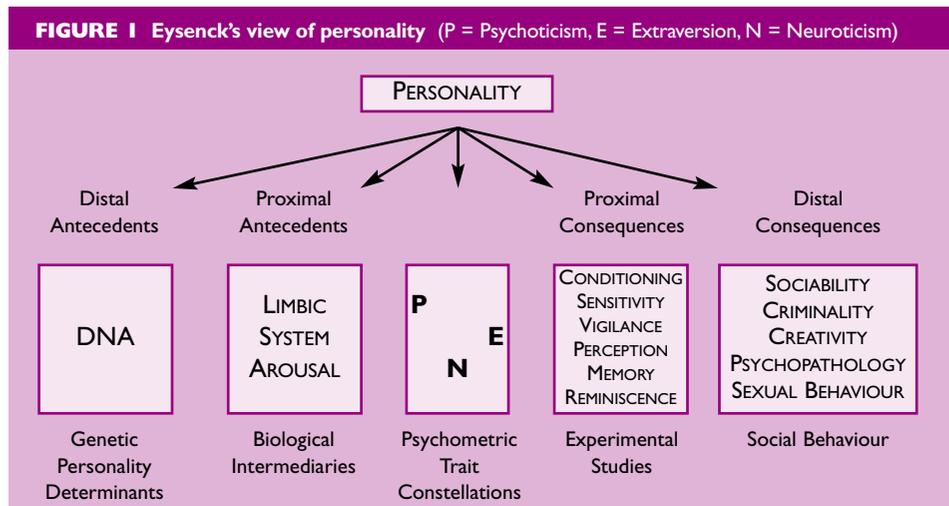
As an example of my application of both correlational and experimental approaches in personality research, I would like to describe the role of confirmatory processing in personality questionnaire responding. One phenomenon of particular interest to me is the tendency for people to accept bogus but plausible descriptions of their personality. An early finding in this area has come to be known as the Barnum effect. When people are presented with ostensible personality feedback consisting of vague and generalised statements (e.g. 'You have a great need for other people to

**If asked whether we are extravert, we tend to think of parties rather than quiet nights in**

like and admire you'), they readily accept such statements as accurate and personally revealing descriptions of the self (for a review see Dickson & Kelly, 1985).

A number of reasons have been proposed for this acceptance of generalised personality interpretations. One argument is that Barnum statements are universally applicable, so the descriptions are accepted because they are in fact true of most people most of the time. However, this explanation does not account for why Barnum statements are judged to be much more true for the self than for other people – that is, they seem to be uniquely self-descriptive. One possibility is that the Barnum effect may reflect a failure to take account of the greater availability of knowledge about the self compared with knowledge about others. People have a much larger memory store of information about themselves than about any other person, so they are able to find more behavioural evidence from their past history that confirms common traits in themselves.

Confirmatory bias is the tendency to seek out information that is consistent with a belief or hypothesis and to avoid or ignore information that is potentially inconsistent (see Nickerson, 1998). An important element in confirmatory bias is the use of a positive test strategy (Klayman & Ha, 1987). Such a strategy involves testing a hypothesis by looking for examples where the hypothesised property is known or expected to be present rather than absent. For example, in testing the



hypothesis that a person is an extravert, a questioner will ask questions such as 'Do you like parties?' that, if answered affirmatively, would confirm the hypothesis; rather than questions such as 'Do you like to be on your own?' that, if answered affirmatively, would disconfirm the hypothesis. This positive test strategy leads to confirmatory bias if evidence consistent with the hypothesis is obtained.

In the case of judgements about the self, we possess complex and detailed knowledge of our past history that is diverse and often contradictory. For many aspects of the self, people should be able to find evidence that confirms any given hypothesis through the use of a positive test strategy. If you ask yourself the question 'Do I like parties?', you will tend to think of occasions when you went out to parties rather than occasions when you stayed in for a quiet night in front of the TV or reading a book. The more examples of going to parties you think of, the more you will think of yourself as extravert.

So how have I assessed this phenomenon?

**Correlational studies** I examined the cognitions that people generated when they evaluated bogus personality descriptions (Davies, 1997). I found that they generated significantly more thoughts consistent with the personality descriptions than thoughts inconsistent with the descriptions (e.g. in evaluating the statement 'Security is one of your major goals in life', they tended to think of examples from their past when they had acted in a safe, responsible way rather than in a rash, impulsive way). That is, they showed confirmatory bias. Moreover, their ratings of the accuracy of

the personality descriptions were significantly correlated with the availability of confirming evidence, as measured by the relative numbers of consistent and inconsistent thoughts generated.

However, this research only provided indirect evidence (via correlational and covariance analyses) for the causal role of confirmatory bias, because confirmatory and disconfirmatory processing were not experimentally manipulated.

**Experimental studies** Next, I investigated people's evaluation of personality information after they had been induced to generate either confirmatory cognitions, disconfirmatory cognitions or both (Davies, 2003). They were presented with personality statements such as 'You have a great need for other people to like and admire you'. Some participants were asked to write down only examples from their past behaviour that were consistent with the statements (e.g. trying to please or impress someone), whereas others were asked only for inconsistent examples. The results showed that generating only disconfirmatory thoughts led to significantly lower accuracy ratings for the personality descriptions than generating both types of thought or no thoughts, whereas generating only confirmatory thoughts led to significantly higher accuracy ratings than generating both types of thought or no thoughts.

**Implications** Apart from shedding light on processes involved in the acceptance of personality statements, these studies also suggest how the evaluation of such statements might alter one's self-conceptions. People do not realise that they

are testing hypotheses in a biased manner when they use a positive test strategy (Kunda *et al.*, 1993). They may therefore conclude that the evidence retrieved about themselves reflects a true picture of the self. It is easy to see how one's current self-concept can be influenced by such evidence-gathering strategies. A great deal of research has testified to the stability of the self-concept in adults (Markus & Kunda, 1986). However, along with other work (e.g. Kunda *et al.*, 1993), my research shows that there is some malleability in the self-concept. I think the circumstances under which self-concept change occurs is a vitally important one for personality psychologists to understand.

### **Cognitive styles**

Eysenck had interests in both personality and intelligence, although he did much less empirical work on the latter. One construct that bridges the gap between personality and intelligence (or cognitive abilities) is cognitive style. Cognitive styles are people's characteristic and typically

preferred modes of processing information (Sternberg & Grigorenko, 1997): how a person typically *does* think, rather than how well they *can* think.

One cognitive style that should have clear implications for cognitive processing is dogmatism. Central to Rokeach's (1954)

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### **'studies of individual differences can add much to our understanding of cognitive processes'**

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analysis of dogmatism is that an individual's cognitive system is organised into belief–disbelief systems. This structural aspect of dogmatism is characterised by the relatively closed cognitive organisation of beliefs and disbeliefs about reality. The closed nature of the belief systems of high-dogmatic individuals is observed in their tendency to compartmentalise and isolate their beliefs and disbeliefs, whereas the more open

belief systems of low-dogmatic individuals is observed in their readiness to make connections between disparate beliefs. For example, people high in dogmatism endorse statements such as 'Of all the different philosophies which exist in the world, there is only one which is correct'.

Perhaps because of an early emphasis on the cognitive structures associated with dogmatism, little research has been carried out on the underlying cognitive processes involved in dogmatic judgement and decision making. The investigation of confirmatory processing as a function of dogmatism seemed like a good opportunity to investigate cognitive processes as a function of cognitive style.

Initially, I examined dogmatism in a belief persistence paradigm (Davies, 1993). This particular paradigm – known as 'belief persistence after evidential discrediting' – involves establishing an erroneous belief and then demonstrating that the belief was based on flimsy, false or nonexistent evidence (Ross *et al.*, 1975). In these circumstances, people persist with

their erroneous belief because they recruit additional evidence from their self-knowledge that bolsters the original belief and that is left intact even when the original evidential base is removed. In other words, confirmatory processing leads to belief persistence. For example, suppose you are (falsely) told that you have done much better than average in a test of spotting fake and genuine suicide notes. To explain this unexpected skill you will probably reflect on your abilities in related areas – perhaps being a good listener and the ability to empathise. When you discover that the test result was rigged, you nevertheless persist in your belief in your new-found ability, because the confirming beliefs in yourself as a good listener and empathiser are left intact.

I found that belief persistence was much greater for those high than for those low in dogmatism, as measured by Rokeach's Dogmatism Scale. In addition, those high in dogmatism generated more supporting evidence and much less contradictory evidence than did those low in dogmatism. Through covariance analysis I found that differential evidence generation accounted for some of the belief persistence effect and for most of the difference in belief persistence as a function of dogmatism.

In further studies of belief formation, I again found evidence for an association between dogmatism and confirmatory bias (Davies, 1998). However, there was an asymmetry in the findings such that the difference between high and low dogmatics lay mainly in the generation of disconfirming rather than confirming evidence. From an analysis of the evidence generated, it seemed to me that high dogmatics were inhibited in their generation of contradictory evidence by the prior generation of supporting evidence. I found that high dogmatics were much more likely to produce supporting evidence before contradictory evidence.

In the literature on judgement and decision making, there is a phenomenon called output interference: generating a given reason for a decision or judgement inhibits the generation of other reasons (e.g. Hoch, 1984). In particular, generating a supporting reason interferes with the ability to generate a contradictory reason, and vice versa. By experimentally manipulating the order in which people generated supporting and contradictory reasons, I found not only that high dogmatics were more prone to output

interference in the generation of reasons but also that this differential reason generation produced (and indeed accounted for) significant differences in beliefs as a function of dogmatism.

This research on dogmatism again illustrates the benefits of amalgamating correlational and experimental methods. Research in mainstream social cognition has led to a detailed understanding of how most people typically process information about everyday social events. However, relatively little research has been carried out on individual differences in such social information processing. Yet studies of individual differences can add much to our understanding of cognitive processes. Such studies can provide a valuable test of normative theories by investigating the effects of naturally occurring variations in postulated mediating processes.

The present research underscores this point and emphasises the utility of combining different theoretical approaches – one involving a general process (confirmatory bias), the other an individual-difference variable (dogmatism) – to generate new findings that would not be produced using either approach alone.

Thus, dogmatic individuals adopt more extreme attitudes and beliefs because they generate fewer contradictory reasons due to greater output interference, and differential reason generation produces greater primacy effects in the judgements of dogmatic people because they tend to compartmentalise their beliefs and disbeliefs.

### Conclusion

I would like to conclude with a quote from one of Hans Eysenck's last papers (Eysenck, 1997), which I think encapsulates one of his most important legacies:

*Bright and dull, extraverted and introverted, neurotic and stable – the personality of the participants will (nearly) always interfere with the actions of [experimental] independent variables. This makes experimentation much more complex and difficult, requiring experimentalists to acquaint themselves with the theories and findings of personality researchers. But there is no alternative. Scientists cannot disregard factors that can be demonstrated to affect their experiments. Conversely, the inclusion of such factors will inevitably throw new light on the personality theories in question. And what is more,*

*researchers shall achieve the aim of having a unified psychology and shall possess a truly scientific paradigm.*  
(p.1230)

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