



## Personality and psychology

# Hans Eysenck's unifying themes

**A**NY discussion of the development of psychology over the past 50 years would be incomplete without consideration of the important and wide-ranging work of the late Professor Hans Eysenck (1916–1997). This is nowhere more apparent than in the area of personality psychology; however, it is also apparent at the interface of personality and psychology, which is the topic of this article.

Eysenck brought psychology to the masses, and perhaps did more than any other British psychologist to popularise psychology, through his books, articles, and radio and TV appearances. His trilogy of popular books was especially well-received: *Uses and Abuses of Psychology* (1953), *Sense and Nonsense in Psychology* (1957a) and *Fact and Fiction in Psychology* (1965), as well as other scientifically sound and accessible books such as *Psychology Is About People* (1977).

Eysenck also had the ability to inspire and influence a whole generation of psychologists. I, for one, was encouraged to enter psychology and then, later, to focus on personality and individual differences as a central research theme during my career. After undergraduate study, I conducted doctoral research on the biological bases of personality in the department that Eysenck himself founded at the Institute of Psychiatry (IoP) in London. I was supervised by another world-famous psychologist, Jeffrey Gray, who himself was attracted to the study of



**PHILIP J. CORR** gave the *Hans Eysenck Memorial Lecture at the Society's Annual Conference*.

personality by Eysenck's work. Working in Eysenck's department – in which he was still active way into his seventies – and benefiting from his attendance at the Personality Research Group (see Corr, 2000) at the IoP, served further to reinforce my appreciation of his contribution to psychology as well as the importance of his theoretical and professional perspectives for the future of the discipline.

### But, what is psychology?

If asked at a party, or by fresh-faced first-year undergraduates, 'What is psychology?', what would you say? A typical reply would be along the lines of 'Well, it's the scientific study of behaviour and the mind'. Or remembering the definition on the British Psychological Society (BPS) website, 'Psychology is the scientific study of people, the mind and behaviour'. If you were then asked, 'What are the main areas of psychology?', then you may go on to reply that, 'Its main areas are social, cognitive, biological, occupational, etc.' Academic psychologists might also point to the Society requirements of the graduate basis for registration for BPS-approved psychology degrees. Research-active psychologists may even finesse these distinctions, pointing, for example, to the emerging importance of cognitive neuroscience – the combining of cognitive science (which adopts the 'software' symbolic language of information processing) with neuroscience (the 'wetware' of the brain).

However, the person on the Clapham omnibus might give very different answers to these questions: their definition of

psychology would almost certainly include the concept of 'personality', which they would consider to be part and parcel of the whole enterprise of trying to understand 'the scientific nature of human behaviour and the mind'. They would want to know more about the 'people' mentioned in the BPS definition of psychology.

### Personality matters

In the Hans Eysenck Memorial Lecture I gave at the Society's 2007 Annual Conference in York, I set out to explore the position of the concept of personality through the prism of Eysenck's work. Reflecting the title of the talk and this article, Eysenck's perspective for a scientifically viable psychology centred on three major themes.

- The importance of personality processes in general psychology;
- The need to achieve a unification of experimental and correlational schools of psychology;
- The scientific importance of studying human behaviour at all levels of analysis, from DNA to social interaction.

Like Eysenck, I want to argue that these themes go to the heart of psychology: not only do they help us to understand the current scientific and professional status of psychology, but they hold crucial implications for the further development of psychology – and, indeed, whether the discipline of psychology has a future at all. The answer to this question goes to the heart of psychology: what are its core conceptual and scientific bases? I want to

## WEBLINKS

The H. J. Eysenck official website:

<http://freespace.virgin.net/darrin.evans>

Wales Institute of Cognitive Neuroscience:

[www.wicn.ac.uk](http://www.wicn.ac.uk)

Reinforcement Sensitivity Theory Research Group:

[www.swan.ac.uk/research/RST](http://www.swan.ac.uk/research/RST)

A major centre for affective neuroscience:

<http://psypzh.psych.wisc.edu>

argue that personality is at the heart of these bases. Eysenck made this point well:

*Individuals do differ...and it seems to me that psychology will never advance very far without a recognition of the complexities which are produced by this fact of personality.* (1965, p.8)

### Eysenck's unifying themes

**The importance of personality** Hans Eysenck gave us a new and important way of thinking of personality. Instead of seeing it as yet another faculty of mind, he conceived of it as reflecting fundamental brain-behavioural systems that:

- show (systematic) variation in the population;
- have pervasive effects on cognition, emotion and behaviour; and
- show stability over time.

But, which brain-behavioural systems are implicated in personality? The answer must be: *any* and *all* that show the above characteristics. This seemingly innocuous conjecture has wide-ranging implications for how we view personality processes within general psychology. Specifically, the Eysenckian view of personality states that such brain-behavioural processes:

- exert pervasive (input) influences on all psychological functions; and
- serve to differentiate people in (output) terms of habitual traits of behaviour (e.g. as measured by questionnaire); for example, Extraversion and Neuroticism.

Eysenck developed his own specific theory of the important brain-behavioural systems, based initially upon Pavlovian notions of cortical excitation/inhibition and then dominant Hullian learning theory

(Eysenck, 1957b), and then arousal/activation systems, reflecting advances in neuropsychology (Eysenck, 1967). But his *general* theory of personality has had a major influence upon the development of more advanced theories of personality, most notably the reinforcement sensitivity theory of Jeffrey Gray and colleagues (more of this later).

The crucial aspect of Eysenck's general theory of personality is that personality processes are at the heart of general psychological processes, whether studied by, for example, cognitive, social, educational or clinical psychologists. According to this theoretical position, what we call 'personality' reflects variation in the operating parameters of major brain-behavioural systems, of *all* varieties.

If we take seriously this position, then it must follow that all psychological processes which show the three characteristics given above have a personality component. It turns out that most (if not all) psychological processes show these characteristics – even phylogenetically old systems where evolution might be expected to have eliminated substantial variation in the operating parameters of such systems, such as procedural learning (e.g. learning a specific language or dialect). One compelling reason for adopting this position is that systems which have a polygenic basis (i.e. are influenced by multiple genes, each independently assorted during reproduction) will show a Gaussian (normal) distribution (i.e. variation), and we see such variation approaching a normal distribution even with a three-gene system (Corr, 2006). Polygenic systems are common for virtually all complex psychological phenotypes.

But has this importance been truly appreciated? In the Foreword to Eysenck's (1947) seminal *Dimensions of Personality*, the psychiatrist Aubrey Lewis wrote:

*Personality is so cardinal a matter in psychiatry, that any ambiguity in the concept or uncertainty about how to describe and measure the qualities it stands for, must weaken the whole structure of psychiatry, theoretical and clinical.*

One could easily – and with significant scientific justification – substitute one's own academic or professional specialism



**Eysenck Memorial Lecture**

for 'psychiatry' in this quote. Personality psychology is important, and general psychology will be all the weaker by not recognising this fact.

Unlike our European and North American colleagues, British psychologists have been peculiarly slow in accepting this fact. For example, personality psychology is inadequately represented in the BPS, with neither its own interest group nor Division; and it does not even have a check-box for conference submissions. No doubt, this is partly the fault of personality psychologists themselves, but it is also attributable to the predominance of experimental (cognitive) psychology which has colonised the major departments of psychology in the UK.

**Unification of experimental and correlational psychology** For most of his life, Eysenck advocated the unification of the individual differences tradition and the experimental tradition in order to combine their respective strengths. This was the theme of Lee Cronbach's (1957) American Psychological Association Presidential Address, in which he argued:

*Psychology continues to this day to be limited by the dedication of its investigators to one or the other method of inquiry rather than to scientific psychology as a whole. (p.671)*

It remains a fact that these two traditions that are still largely separated in British

psychology. In his last scientific paper, in 1997, Eysenck reiterated the call:

*It is suggested that the scientific status of psychology is put in danger by the lack of paradigms in many of its fields, and by the failure to achieve unification, psychology is breaking up into many different disciplines. One important cause was suggested by Lee Cronbach...: the continuing failure of the two scientific disciplines of psychology – the experimental and the correlational – to come together and mutually support each other. (p.1224)*

This theme of unification has been acknowledged – 'we all know that' – but, nonetheless, largely ignored in mainstream academic psychology. (Of course, in some

**'Eysenck's vision of a unified psychology is now starting to be realised'**

areas of applied psychology, personality and individual differences are all important, e.g. selection and assessment.) This general failure is to be regretted. However, it must be conceded that one valid criticism of the correlational approach has been its failure to formulate well-developed theoretical models, relying instead on blind empiricism and the multivariate statistical techniques, which are themselves open to

substantial criticism as a basis for developing psychological theory of individual differences. As noted by Revelle and Oehlberg (in press) in a brief review of the personality literature:

*The unfortunate conclusion from this brief review of publication practices is that the use of experimental techniques is underemployed in current research. This suggests that the desired unification of the correlational/observational with the experimental disciplines called for by Cronbach and Eysenck has not yet occurred.*

However, there are signs that this dismal situation is changing, albeit very slowly (see below).

**Behaviour: From DNA to social interaction** Technological innovations have caught up with Eysenck's thinking. He was one of the first psychologists – and certainly the most criticised – to call attention to the need to achieve psychological understanding from all available levels of analysis, starting at DNA, through neurophysiology and neuropsychology, to individual and social behaviour, including their normal (e.g. occupational behaviour) as well as their pathological varieties (e.g. clinical disorders and criminality).

Eysenck's vision of a unified psychology is now starting to be realised with the technological sophistication of cognitive neuroscience, which has lent empirical support to his own personality theory (e.g. Kumari *et al.*, 2004), as well as exploring the relationship between personality and psychological processes more generally (e.g. emotion processing: Canli *et al.*, 2001). But the full force of his vision will be realised in the development of neuroscientific models of behaviour and personality that are embedded in empirically grounded brain-behavioural systems, such as the one described below.

The advent of sophisticated methodologies in neuroscience (e.g. functional MRI and MEG) are also starting to have an impact on uniting different levels of analysis – for instance, it is possible to use genetic analysis and functional imaging in the same study. Encouragingly, personality measures are starting to be used in such studies (e.g. Cohen *et al.*, 2005; Hariri & Weinberger, 2003). Recently, we have seen the

**REINFORCEMENT SENSITIVITY THEORY OF PERSONALITY (RST)**

RST is a highly influential account of basic systems of emotion, motivation and learning, and forms the basis of one of the leading biological models of personality. It postulates three principal systems.

1. Fight-Flight-Freeze System (FFFS)
  - sensitive to aversive stimuli
  - associated with defensive avoidance (fear) and escape (panic)
2. Behavioural Approach System (BAS)
  - sensitive to appetitive stimuli
  - associated with approach and 'anticipatory pleasure' (hope)
3. Behavioural Inhibition System (BIS)
  - sensitive to goal conflict (e.g. approach-avoidance): 'defensive approach'
  - associated with rumination, risk-assessment and anxiety

Variation in these systems gives rise to what we call 'personality', and their clinical expressions. For example, a person with a hyperactive FFFS is especially prone to develop fear-related conditions; someone with a hyperactive BIS is prone to develop anxiety (conflict) disorders; and someone with a hyperactive BAS is especially prone to develop disinhibitory disorders (e.g. gambling) in the presence of rewarding stimuli (e.g. slot machines). Complex disorders often reflect a blending of these systems.

emergence of 'social neuroscience' and even 'educational neuroscience' – for example, these are being developed in the Welsh Institute of Cognitive Neuroscience (WICN), a £5 million initiative of the Welsh Assembly and HEFCW involving collaboration of Cardiff University and the University of Wales at Bangor and Swansea.

The prospects for a unification of experimental and correlational psychology are promising, but they cannot be assured without a conceptual realignment of psychology: that is, personality and experimental psychology; not, personality or experimental psychology, as it so often the case today.

### Reinforcement sensitivity theory

The one British psychologist who did more than any other to combine the correlational and experimental schools of psychology was Hans Eysenck's star pupil, Jeffrey Gray. Gray has had a major influence on behavioural psychology, arguably because he combined these schools, as indeed did Ivan Pavlov before him and Eysenck (see Corr & Perkins, 2006). It is noteworthy that, at the Society's 2007 Annual Conference, Gray was awarded (alas posthumously) the Book Award for *Consciousness: Creeping Up on the Hard Problem* (2004).

Over a period of 40 years, Gray developed one of the most sophisticated models of emotion, motivation and personality, now widely known as reinforcement sensitivity theory of personality (Corr, 2004, in press; see box). Gray searched for major brain-behavioural systems that could support the existence of major dimensions of personality, especially ones that had particular clinical significance. His answers differed from Eysenck's, but his scientific approach was highly similar.

Of critical importance was the assumption that the variations observed in the functioning of important brain-behavioural systems comprise what we term 'personality' – in other words, personality does not stand apart from basic brain-behaviour systems, but rather is defined by them. Eysenck argued, and Gray showed, that the science of behaviour is best achieved by exploring multiple levels of analysis: from the former mystery of the unit of inheritance (DNA/genes) to the current mystery of the nature of

consciousness, and by so doing insights from one level inform understanding at other levels.

Attesting to the influence of Gray's own attempt to unify psychology, in a recent survey of the papers published in the personality journal founded by Hans Eysenck, *Personality and Individual Differences*, Revelle and Oehlberg (in press) noted:

*Of the studies that are experimental in PaID, the majority are tests of hypotheses derived from Reinforcement Sensitivity Theory.*

### Conclusion

If Hans Eysenck were alive today, I think he would be very pleased with the direction that personality psychology has taken. Now it is common practice to study the genetics of personality traits, and use functional neuroimaging to relate brain processes to personality traits; and a start has been made to unify the experimental approach afforded by cognitive neuroscience with the individual differences approach used by personality psychologists.

I think, however, he would be less pleased with the lack of progress towards integrating the experimental and correlational approaches more generally; and he would be remain concerned about the significance of this lack of progress

## DISCUSS AND DEBATE

Is personality really fundamental to all areas of psychology?

Why are individual differences between people ignored in mainstream experimental (cognitive) psychology?

How might psychology best unify itself?

Why are personality psychologists so often obsessed with description rather than a causal explanation?

Does Eysenck's vision advance or hinder our understanding of psychology?

Why has the home of personality psychology neglected it for so long?

Have your say on these or other issues this article raises. E-mail 'Letters' on [psychologist@bps.org.uk](mailto:psychologist@bps.org.uk) or contribute (members only) via [www.psychforum.org.uk](http://www.psychforum.org.uk).

for the future well-being and vitality of psychology as a viable unitary scientific discipline, as distinct from a convenience term for the loose association of disparate disciplines – ever-increasing in narrowing specialism – that have no unifying theoretical principles. Eysenck might also remind us of the line from Abraham Lincoln's famous speech: 'A house divided against itself cannot stand.'

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