RESEARCH IN PERSONALITY TRAITS AND INDIVIDUAL DIFFERENCES

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Introduction:

Personality traits have been a central part of the study of personality for 70 years or more, from early studies by personologists to more recent studies by Cattell and Eysenck, and their associates. Most of the research has used data from self-report inventories and rating scales and these have posed problems, such as response distortion, that have become the focus of further research. Currently, there are attempts to assess personality traits through other means than self-report invento- ries, such as through genetic-biological analyses and from computer-generated approaches. A review of the history of personality traits, the recent attempt to define and limit personality structure to the 'Big Five', and the influence of these and related traits on behaviour is given in this chapter, which also details the theoretical emphases asso-ciated with the various approaches, especially in the current century.

Personality trait constructs are typically viewed as enduring dispositions that persist and remain relatively stable over time (see Boyle & Saklofske, 2004; Boyle, Matthews, & Saklofske, 2008). Historically, trait constructs were proposed by personologists such as Allport, Cattell and Eysenck. Allport (1937) defined a trait as 'a generalised neuropsychic structure'. Personality traits are believed to filter incoming stimuli such that, for example, a high A-Trait (Anxiety Trait) individual may interpret a multi- tude of diverse stimuli as threatening. Personality trait research has stim- ulated much controversy as to the optimal measurement framework, the causal effects of traits on behaviour, as well as the influences of sociocul- tural factors on traits (Boyle et al., 2008). Nomothetic approaches that seek to identify common personality traits have become predominant (see the works of Cattell, Comrey, and Eysenck). Cattell was an early proponent of the nomothetic approach that described personality in terms of discrete common factors (Cattell, 1978, 1980). The Cattellian psychometric model (Cattell, Boyle, & Chant, 2002; cf. Boyle, 2006, 2008b) was derived from a programmatic series of factor analyses of data from self-report questionnaires and rating-scales (e.g., Cattell's 16 Personality Factor [16PF] Questionnaire). Cattell (1973, 1980) viewed traits as causal latent constructs (source traits) to be distinguished from more superficial surface traits. In Cattell's hierarchical personality trait model, higher-stratum factors were defined by combinations of primary traits. In Cattell's model (also see Nesselroade & Cattell, 1988), the variance explained by the personality sphere is regarded as being mostly discrete from that accounted for by ability, motivation and mood- state domains. As well, situational influences on behaviour are believed to be moderated by traits. These features of Cattellian theory remain as central tenets of contemporary trait theory in the 21st century.

Historically, personality trait measures have consisted mainly of intro- spective self-report questionnaires (Q-data), or subjective reports of others via rating scales (L-data), which have been limited by problems of item transparency, motivational/response distortion, outright dissimula- tion, conscious/unconscious faking (good/ bad), inadequate self-insight, and/or distorted perceptions of others. Use of objective (T-data) person- ality tests, where it is not possible for the respondent to detect what traits are being measured, would certainly help to minimise motivational/response distortion (see compendium of objective personal- ity tests compiled by Cattell & Warburton, 1967). While the objective– analytic test battery (OATB) (Schuerger, 1986, 2008) comprises such objective tests, nevertheless, a major deterrent to its use is the length of time needed for administration (taking longer than 5 hours). Thus, con-struction of truly objective, computer-interactive T-data personality tests will be a major

challenge for personality research in the years ahead.

In contrast to Cattell's hierarchical trait model (e.g., 16 obliquely- rotated primary factors and 5–6 second-order 16PF factors), Eysenck focused on just three broad dimensions of extraversion, neuroticism and psychoticism as measured in the Eysenck Personality Questionnaire or EPQ-R (see Eysenck, 1981; Eysenck & Eysenck, 1985; O'Connor, 2008). At the second-order 16PF level, the Cattellian and Eysenckian factors were similar, prompting Eysenck to acknowledge that 'The Cattell and Eysenck constructs and theories should be seen, not as mutually contradictory, but as complementary and mutually supportive' (1984, p. 336). However, whereas Eysenck (1994) suggested a gradation from normal to abnormal personality (e.g., EPQ-R Psychoticism scale), Cattell (1995) maintained that abnormal traits extend beyond the normal trait sphere into the abnormal personality trait domain. In the factor-analytically constructed clinical analysis questionnaire (CAQ), Part A measures the 16 normal per- sonality trait dimensions. In addition, Part B measures 12 abnormal trait factors. Unlike other personality instruments (such as the California Psychological Inventory [CPI], the 16PF, the Revised NEO Personality Inventory [NEO-PI-R], the Minnesota Multiphasic Personality Inventory [MMPI], or the Personality Assessment Inventory [PAI]), administration of both Parts A and B of the CAQ provides coverage of both the normal and abnormal personality trait spheres.

Two broad strategies for investigating personality structure have been employed (Matthews, 2004). First, biological reductionism attempts to explain trait constructs in terms of underlying brain function. Thus, genetic variation is believed to impact directly on brain systems such as Eysenck's Reticulo-Cortical Activation Model (cf. Gray's Reinforcement Sensitivity Theory [RST]), which in turn influences behaviour (Pickering & Corr, 2008). While traits are presumed to modulate the processing of incoming stimuli, Gray's RST model attributes traits to motivational rather than arousal systems. Second, the cognitive science approach relates personality traits to brain function (hardware), virtual symbolic software (information-processing), and self-knowledge (intentions, motives, goals; see Matthews, 2008). Progress in understanding traits is signaled by (1) greater understanding of the biological bases of traits, (2) increased inte- gration of trait research within mainstream psychology, and (3) increased use of trait assessment in real-life contexts (e.g., measurement of traits in occupational selection; Matthews, Deary, & Whiteman, 2003).

Models of the Structure of Personality

Although the five-factor model (FFM) has been promoted strongly (see McCrae & Costa, 2008), a slightly different five-factor structure has been discovered empirically from factor analyses of 16PF data on over 17 000 respondents (Krug & Johns, 1986). This 16PF data has been verified across males and females separately, providing solid evidence that the higher-stratum 16PF factors are robust. In addition, Zuckerman's five- factor model (Zuckerman, 1995, 2005) incorporates biological, compara- tive, experimental, and trait approaches extending beyond mere descriptive accounts of traits as, for example, in the currently popular lexical FFM (cf. Fraley & Roberts, 2005). Thus, Zuckerman argued that personality traits arise from multiple underlying neurophysiological and

biochemical processes. In addition, Boyle, Stankov, and Cattell (1995) suggested that the currently popular FFM was derived from methodologi- cally flawed factor-analytic analyses. They also reported empirical evi- dence suggesting that the FFM does not provide coverage of more than 40% of the known trait variance within the normal personality sphere alone, let alone the abnormal trait sphere, which is virtually ignored. Further limitations of the FFM

relate to the validity of dimensional models generally (McAdams, 1992; Roberts, 2006), the presumed stability of traits over the lifespan (Roberts, Walton, & Viechtbauer, 2006a, 2006b), and associated psychometric limitations (Block, 1995; Boyle, 2008a). Since theoretically, the personality sphere can be divided into any number of factors, it remains to be seen whether or not a consensus can be reached as to a universally accepted taxonomy of personality traits.

Genetic Factors and Culture in Personality

Johnson, Vernon, and Feiler (2008) concluded that genetic factors appear to play a critical role in shaping interactions with the environment (also see Rutter, Moffitt, & Caspi, 2006). If personality traits reflect universal brain physiology, then they should emerge as common factors across diverse cultures. It is hoped, new brain-imaging studies using functional Magnetic Resonance Imaging (fMRI; Congdon & Canli, 2008) may permit mappings of traits onto specific brain structures, enabling better theories of personality traits to emerge (Pickering & Corr, 2008). On the other hand, if personality structure is a function of cultural variations, then trait structures found within different cultures should differ signifi- cantly (see Chiu, Kim, & Wan, 2008).

Abnormal Personality Traits

Abnormal personality traits are receiving increased attention (Malik, Johannsen, & Beutler, 2008). Constructs underlying cognitive–behaviour therapy (e.g., see Fernandez, 2008; Fernandez & Boyle, 2008) such as the self-schema, attentional and memory bias, and dysfunctional coping appear to be related to traits such as neuroticism (Matthews, 2008). Likewise, personality trait measurement is central to children's psycho- educational assessment (Andrews, Saklofske, & Janzen, 2001). Trait psy- chology has also played a prominent role in the area of 'emotional intelligence' (EI; e.g., Rivers, Brackett, & Salovey, 2008; Roberts & Schulze, 2008). However, it is important to note that some uncertainty remains as to the construct validity of currently available EI measures (see Matthews, Zeidner, & Roberts, 2002).

Conclusion

In conclusion, the notion of personality traits has received widespread acceptance in light of the universal consistencies shown in individuals' behaviours and responsivities to situational stimuli. In terms of the peer-reviewed journal literature, both Cattell and Eysenck were listed among the top 10 most highly cited psychologists of the 20th century (Haggbloom et al., 2002, p. 142), leaving little doubt as to the prominence and influence of both these giants of personality research. Debates about factor analytic methodology have often served to obscure the fact that both Cattell and Eysenck were in much agreement in relation to their tax-onomic findings into human personality structure. More recently, the FFM has become prominent as a putative framework for organising per- sonality trait data. Although the FFM has generated much empirical data, substantive objections to the FFM have been raised in relation both to the validity of dimensional models generally (and to the psychometric evi- dence more specifically). However, progress in understanding traits is evi- denced by a better understanding of the biological bases of traits, an increased integration of trait research within mainstream psychology, and an increased focus on assessing traits. Although the major focus to-date has been on introspective (subjective) self-report questionnaires and rating scales, there are indications that research into the construction of computer-interactive objective personality tests will become more promi-nent during the 21st century.

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