

Good Programmers: Nature or Nurture? (The bed of Procrustes)

Dr Chris Exton

*Department of Computer Science and Information System
University of Limerick
chris.exton@ul.ie*

Within society, psychological theories of personality and cognitive ability, unlike many other more theoretical topics, can often have a direct effect on a large number of individuals. This effect can be observed in terms of the opportunities individuals are afforded, advice that they are given in relation to their possible career choices, and psychological treatment or counselling they might receive. Considering this, proponents of the different theories of personality and cognitive ability have a particularly important role as their views and findings will often have a direct effect on people's lives.

Butt (2007) describes how the different theories of personality broadly emerged from the three academic traditions of clinical, psychometric and experimental. These traditions come with their own cultures. These cultures are represented by a number of different positions relating to assumptions made, how knowledge has been discovered or constructed and how their related theories are used. For example, clinical psychologists are concerned with different stimuli; the diverse ways in which people react to them; and what strategies can be utilised to overcome any undesirable reactions. Kelly's (cited by Butt 2007) personal construct theory along with its associated methods such as repertory grid, were constructed for the purpose of effecting individual change through counselling by constructing a model for each individual. Occupational psychologists, however, are less concerned about the individual than they are about the differences between individuals, and how differences between groups of individuals can be measured for the purposes of employment or educational categorisation. So trait theories such as Eysenck's (Eysenck & Eysenck 1985) '3F' model which is comprised of extraversion, neuroticism and psychoticism have been developed in response to a need to establish a common psychometric model that could be used to represent and categorise individuals in relation to one another.

In relation to psychometrics, Salmon (cited by Butt 2007) uses the analogy of Procrustes to describe how individuals are in effect adjusted to fit a particular trait theory model rather than the model being adjusted to fit the individual as is the case with the clinical humanist tradition. As with many other debates within psychology the arguments advanced by the different traditions can be viewed as specific manifestations of a number of other broader and ongoing debates. Salmon's analogy draws on the ever present 'reductionist' criticism levelled at many theories that use quantitative or experimental evidence or proof of success. It is important that these criticisms are accepted when appropriate, and in the case of psychometrics it is difficult not to accept at least some form of reductionism is taking place. The real question then relates to whether psychometrics is useful in terms of its ability to represent anything meaningful. Even if it fails on this account maybe it can prove useful in providing an insight into the ever present nature/nurture debate and establish what aspects or components of our personalities, cognitive abilities if any, are innate or determined at birth.

In his book Butt (2004) describes a number of apparently contradictory personality trait models (Cattell, Eysenck, cited by Butt 2004) some of which he states are still in common use. Apart from those described by Butt (2004), history is littered with large numbers of quasi-psychometric models that have been used to provide a supposed scientific basis for everything from convict transportation to Australia (Hughes 1987) to the selection of appropriate races for recruitment in the British colonial army (Rand 2006). Interestingly in Eysenck's 1964 (cited by Butt 2007) paper he includes both Australian and British female prisoners in a figure portraying various neurotic groups. Considering

these and several other questionable uses of psychometric models, Salmon has a good basis for concern.

What we can't forget however is that in a way Salmon (Butt 2007) is at least partially acting in a 'Procrustian' manner in that she is attempting to fit the cognitively based psychometrics tradition to the bed of the more qualitative humanistic clinical tradition. There is a clear separation of psychological perspectives between Salmon's tradition and that of personality trait theorists such as Eysenck and Cattell (cited by Butt 2004). Cognitive psychologists such as Eysenck and Cattell are particularly concerned with the application of broad based theories which relate to all individuals. The real question for these cognitives is not if the model is useful in terms of capturing the uniqueness and depth of the individual, but whether the model is useful in understanding and categorising a broad range of individuals. There is a utilitarian simplicity that accepts that any model constructed will have elements of weakness due to its reductionist nature, but in reality may still have value to psychometric psychology in that it can still reliably be used to somehow categorise an individual. The use of correct scientific method with its associated statistical significance is of great importance if proponents or psychometric models are to avoid being described as quasi-scientists.

Eysenck's (Butt 2007) psychometric measurement works from his perspective because it is reductionist in nature and only attempts to explain some very rudimentary aspects of personality. So we can imagine that for Eysenck (Eysenck & Eysenck 1985) the fact that his '3F' model lists only three traits and is obviously reductionist in that it manifestly constrains psychological assessment, it is an acceptable price to pay if it can be demonstrated as both quantitatively correct and useful. On this point it should be recognised that other psychometric researchers have attempted to offset much of the reductionist criticisms by constructing more complex models. This is often achieved by increasing the number of traits and thus the richness of possible description. One such example was developed by Cattell (cited by Butt 2007) who contended that the number of basic personality traits needed to describe people adequately was sixteen. For Eysenck (Butt 2007) however it could be argued that he recognised the richness of individuals by refusing to include most aspects of an individual's personality in his model. This is in most probability because he understood much like Salmon that individuals are extremely complex entities to whom scientific psychological methods are currently only weakly capable of doing justice.

Salmon, as with other psychologists from the humanistic tradition, argue that the number of personality traits is only bounded by the number of individuals on the planet, and that it is pointless to try and construct a model which can represent all individuals. They must accept however to some degree the statistical and quantitative evidence that seems to support Eysenck's (Eysenck & Eysenck 1985) model or at least provides an alternative explanation.

So humanistic clinical constructions such as Kelly's Personal Construct Psychology (PCP) theory and the use of its associated techniques such as "repertory grids" or "Salmon line" (Butt 2007), in effect build a rich unique model for each individual, whilst psychometric psychology creates broader based reductionist models that fit all individuals. Thus it seems that we can view PCP and other humanistic traditions as simply co-existing with the psychometric traditions of Eysenck and Cattell, by merely accepting that each has a different agency.

As soon as we attempt to construct this single coherent view, however, we see it is not the entire story. Once we start taking a closer look at some of the claims associated with the relating theories we start seeing the contradictions which make it difficult for these two traditions to co-exist easily. For example, Eysenck (Butt 2007) went beyond simply categorising individuals in terms of personality traits; he was interested in ascertaining why individuals displayed these traits in the first place. He described a number of neurological causal factors that he believed explained why the individual displayed these traits. As a part of this explanation Eysenck positioned trait theory on the nature side of the nature/nurture debate. He believed that personality traits or at least those traits measured by his model were biologically determined and thus were fixed for each individual at birth. Other personality

trait researchers have gone as far as using factor analysis of ancient Greek typology as evidence that such typologies transcend time and culture (Butt 2007) and thus must have a biological explanation.

This fixed or biological explanation of personality traits is not shared by the clinical humanistic tradition espoused by psychologists such as Kelly or Salmon (cited by Butt 2007). The humanistic tradition takes the view that personality traits or at least what appear to be personality traits are transitive and change over time and are affected by environmental aspects such as our social environment, age and counselling. The ability for an individual to change personality traits is an essential pillar of belief for clinical psychologists, as clinical psychology requires this to be true if it is to have any effect.

Curiously in this regard they have interesting bed fellows as when it comes to considering personality traits as not being biologically determined, behaviourists such as Skinner (1974, cited by Butt 2007) have taken a similar stance. Skinner's view was that our personality was a result of the multiple forms of conditioning or in other words the experience to which we had been subjected throughout our lives and as such could be altered (at least in theory) with more appropriate conditioning. As the humanistic tradition embraces the notion of the individual's own ability to adapt and change their own personality traits, it to a large part refutes the psychometric view of a fixed or biologically determined personality at birth.

Of course the story does not end here. Another apparently irresolvable debate in psychology, in the form of the agency-structure dualism, must be considered in relation to the role of society as a determinant factor in our personalities. Research (Sulloway 1996) that compares first born and later born siblings seems to suggest that they have substantially different personalities. Sulloway suggests that there is historical evidence that first borns are typically conservative and more confident than later borns in relation to personality, whilst later borns' personalities are often more flexible and innovative in nature. On an even broader level it seems that the country or culture in which we live is also a factor as researchers (Fischhoff and Lichtenstein, 1977) have found evidence that suggests that people in the western world tend to be over-confident about their knowledge when compared with people from other cultures. Thus our personality cannot be solely ascribed to either genetics or our own personal agency. The societal structures we inhabit are also factors that must be considered.

The number of perspectives and different arguments if nothing else serve to highlight to us that our knowledge about cognitive ability and personality traits and how we perceive individuals is in itself a series of different constructions, none of which can so far be considered to stand head and shoulders above the rest. The factors that produce these different constructions relate to the perspective from which the psychologists have come, as well as what they are trying to achieve. So Salmon's (cited by Butt 2007) position that the use of psychometrics is not an adequate means to assess the psychological characteristics of individuals or to assess the ways in which individuals differ from each other is understandable given her perspective.

If the assessment of an individual is going to be used as a basis for establishing a person's personal cognitive ability or education advancement, psychometrics cannot hope to provide the richness and flexibility that is inherent in Salmon's (Butt 2007) "Salmon line" technique. The "Salmon line" method was developed with a clinical educational application in mind and is well suited for its purpose. The question as to whether psychometrics is an adequate means to assess the ways in which individuals differ from each other, however, is still very much open to debate. Salmon is only partially right in this regard as the alternative is simply to abandon psychometrics, yet psychometrics has a great deal of quantitative evidence to suggest it at least has some credibility and in the absence of anything better is likely to remain as a central tool for occupational psychologists and educational psychologists until something better comes along.

5. References

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