Book review

Biologist backs Plato

The Intelligent Genome

A Heschl

Shakespeare (in *The Tempest*) and Sir Francis Galton (in *Hereditary Talent and Character*, 1865) long ago set the terms for the 'nature/nurture' debate. After 1945, behaviourist psychologists had the upper hand in this battle; but by 1970 the work of ethologists and psycholinguists turned the tide. Today, innate factors are widely acknowledged in the science of human character and conduct even if it is impolitic to mention them to journalists; and champions of the environment like the Open University's Professor Steven Rose (though they burn with social revolutionism) must content themselves with pleading that all development is a complex ongoing interaction effect from which social–environmental factors can never be entirely excluded.

Broadly speaking, Adolf Heschl, Executive Manager of the Konrad Lorenz Institute at Altenberg, is happy with this development while having kind words for complexity-lovers such as the late Stephen Jay Gould and Douglas Wahlsten – he has not heard of Rose. Heschl likes the ideas of 'system-dependent intertwining of complex morphological traits', 'permanently cyclic self-organizing living processes' and 'complex molecular cascades'; and he thinks 'the fundamental and irresolvable conflict of gene *vs* environment has to be thrown on the rubbish heap of outworn concepts.' Yet for Heschl such interactive complexities are important not in carving out some protective niche for beloved environmental factors, but rather as indicating that all serious learning is actually itself genetic (or evolutionary) and that psychology has a '100% causal dependence' on biology. In short, Heschl is a modern Platonist.

Can Heschl provide a larger victory for rationalism and nativism than any since Plato thought possible? Can he even outdo the Platonism of myself and colleagues (Brand *et al*, in press)? Naturally, Heschl makes a little use of modern twin studies showing that separated identical twins are similar in part because they create similar microenvironments for themselves; he knows personality traits and intelligence become more heritable as people age and have more control of their local *milieux;* and he gives a few examples of learning being biologically 'primed' (eg rats react to radiation sickness with an aversion to water). However, Heschl is none too happy with heritability *(h^2)* estimates. He even cajoles the late Hans Eysenck for pointing out that giving all children the same state education keeps IQ's h^2

high – whereas Heschl prefers to say that such an h^2 is meaningless and misleading, and merely summarizes the fact that higher-IQ children usually get the best environments. Yet here is the rub: Eysenck makes a definite and testable (and surely correct) prediction, whereas Heschl serves up nothing but interactionist wind. Of course, there are occasionally $G \times E$ interaction effects for important variables (notably for crime, where having both bad genes and a bad environment has long been known as singularly unhelpful – a result lately confirmed in new research from King's College London (Caspi *et al*, 2002)); but Heschl is not very interested in such empirical deliveries. This is partly because he thinks he has an *a priori* argument that 'human individuals, just like all other multicellular organisms, be they animals or plants, are excluded from any form of real cognitive gain *on principle*'. Sadly, this conclusion, although often repeated in *The Intelligent Genome*, is never demonstrated. It possibly boils down to saying that any animal that shows a cognitive gain would do best to devote itself to passing on its happy genes as soon as possible. Certainly, it leads Heschl to his remarkable (but ill-explained) belief that 'language now has to lose its special status as a knowledge-transmitting ability'.

This is an erudite and up-to-date book, even if the translation is appalling, the sentences are rebarbatively long, and many pages drift by parenthetically without delivering any facts or coming to any definite conclusions. Heschl has the capacity to make even sex boring and incomprehensible – although he fortunately takes back his impulsive claim that 'opposites don't attract' (p 192), admitting 12 pages later that the notorious delight of courting couples in removing each other's clothes may reflect their olfactory search for a partner having a complementary immune system. It is understandable that Heschl wants to avoid such hot potatoes as genetically based (and racially linked) differences in IQ and behavioural restraint. However, accepting the conventional piety that nature and nurture are indecipherable is probably a serious mistake. As one *Nature* author recently put it (Konner, 2002), if there is in the warp and woof of development a blue genetic warp and a green environmental woof, then 'of course, a thicker, denser blue warp makes the cloth a bluer green'. Any English-speaking reader who wants to follow-up the likely proposition that embryos are not featureless bundles requiring masses of interaction for their development – a new embryology that probably encapsulates the more useful parts of what Heschl has to say – will do better to start with Pearson's (2002) article than with *The Intelligent Genome*.

References

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