

(a) Explain what is meant by the nature–nurture debate
(b) Discuss two or more examples of the nature–nurture debate in psychology

The nature–nurture (or heredity–environment) debate concerns the causes of (usually) human abilities and capacities. Nativism is the philosophical theory, according to which knowledge of the world is largely inborn or innate. Nature (heredity) is seen as determining certain abilities and capacities, such as language, perception, and psychomotor abilities, which unfold through the biological process of maturation (Gesell, 1925). Environmental influences are negligible and learning plays little if any part. Empiricism represents the opposite philosophical extreme. According to the seventeenth-century English philosopher Locke, the mind at birth is a ‘tabula rasa’ or blank slate, which is gradually ‘filled in’ through learning and experience. Watson’s behaviourism (1913) embodies this extreme environmentalist approach. These philosophical theories, and the early psychological theories associated with them, appeared to be answering the question ‘Is it nature or nurture?’. But the debate is as much concerned with individual differences as with general abilities or capacities. It becomes most heated when it focuses on intelligence or mental disorders (such as schizophrenia), and the questions asked are ‘How much does each contribute?’ and ‘How does each contribute?’.

Family resemblance studies show that relatives of patients with schizophrenia have a greater risk of being diagnosed themselves as the genetic relationship becomes closer (Kendler et al., 1996). But, as with the study of intelligence, these studies confound genetic with environmental influences. In other words, there’s no way of telling whether the correlation between the risk of developing schizophrenia and degree of family resemblance (blood tie) is due to the greater genetic similarity or the greater similarity of environments. The two major alternative designs, twin and adoption studies, are aimed at disentangling the effects of nature and nurture. The average concordance rate for monozygotic (identical) twins/MZs is five times higher than that for dizygotic (non-identical) twins/DZs (Shields, 1976, 1978). But a more precise estimate for the relative importance of genetic and environmental factors comes from studies where MZs reared apart (MZsRA) are compared with MZs reared together (MZsRT). According to Shields, the concordance rates are quite similar for the two groups, suggesting a major genetic contribution. Adoption studies allow the clearest separation of genetic and environmental factors. Gottesman and Shields (1976, 1982) in a review of adoption studies (such as Heston, 1966; Rosenthal et al., 1971; Kety et al., 1975) concluded that they show a major role for heredity.

The concordance rates for schizophrenia vary widely between studies conducted in different countries, suggesting that different criteria are used for its diagnosis. Both twin and adoption studies also pre-suppose that schizophrenia is a distinct syndrome which can be reliably diagnosed by different psychiatrists. There is reason to doubt both. The highest concordance rate for MZs is 69% (Rose et al., 1984), which still leaves plenty of scope for the role of environmental factors. If schizophrenia were totally genetically determined, then we’d expect to find 100% concordance rate for MZs, that is, if one member of an MZ pair has schizophrenia, the other twin should also have it in every single case. But most diagnosed cases don’t report a family history (Frith & Cahill, 1995). Rose et al. consider selective placement to be the rule in adoption studies (rather than random placement, that is, the assumption that adoptees are placed with parents no more similar to their biological parents than by chance). This would be a major stumbling block for adoption studies, but Lilienfeld (1995) believes the random placement assumption is warranted. The heritability of schizophrenia is comparable to that of medical conditions such as diabetes and hypertension, but the precise mode of

inheritance remains controversial (Frith & Cahill; Lilienfeld, 1995). According to the diathesis–stress model (Zubin & Spring, 1977), what we inherit is a vulnerability towards schizophrenic symptoms, but whether or not we actually display them depends on environmental stressors.

According to Gesell (1925), maturation refers to genetically programmed patterns of changes. The instructions for these patterns are part of the specific hereditary information passed on at the moment of conception (Bee, 2000). All individuals will pass through the same series of changes, in the same order, making maturational patterns universal and sequential. They're also relatively impervious to environmental influence. Gesell was mainly concerned with babies' psychomotor development (such as grasping and other manipulative skills) and locomotion (crawling and walking). These abilities 'develop by themselves' according to a genetically determined timetable. Provided the baby is physically normal, practice or training are unnecessary – they just 'unfold'. For Watson (1925), environmental influence is all-important and human beings are completely malleable. Famously, Watson claimed to be able to train anyone to become anything. He also claimed (1928) that there's no such thing as an inheritance of capacity, talent, temperament or anything else. Despite the influence of behaviourism, the concept of maturation is still influential within psychology, explaining major biological changes such as puberty, and all stages theories of development assume that it underlies the universal sequence of stages (such as Freud's psychosexual theory, Erikson's psychosocial theory and Piaget's theory of cognitive development). Watson's extreme environmentalism was adopted in Skinner's radical behaviourism.

Crawling or walking may appear to need no practice or training, but they require some environmental support, such as adequate diet and opportunity for movement and experimentations (Bee, 2000). At the very least, the environment must be benign (not harmful in any way). But there must also be environmental 'input'. For example, the possession of a language acquisition device (LAD) as proposed by Chomsky (1965) must be applied to the particular linguistic data the child is exposed to (its native tongue). Both Freud's and Piaget's developmental theories illustrate the interplay between nature and nurture. Freud (e.g. 1905) is often referred to as an instinct theorist (implying that he was a nativist), but it wasn't the sexual instinct itself that matters, but rather how significant others (especially the parents) react to the child's attempts to satisfy its sexual needs. Both excessive frustration and satisfaction can produce long-term effects on the child's personality. For Piaget (1970), intelligence is neither a simple copy of external objects nor a simple unfolding of pre-formed (inherited) structures. Rather, it consists of a set of structures that are constructed through continuous interaction between the child and its environment. Both theories demonstrate what Karmiloff-Smith (1996) describes as a trade-off between pre-specification (such as maturation, and inborn biases) and plasticity (the capacity for learning and change). According to Bee (2000), no developmental psychologists today would take the 'Is it nature or nurture?' form of the debate seriously, because every facet of a child's development is a product of some pattern of interaction between nature and nurture.