

An explanation of child development, based on genetic



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The explanation of human behaviours has been a debatable subject for behaviourists and geneticists since always. Hence, many attempts to unscramble the effects of innate predispositions from their context in human development have been made (Plomin, DeFries, & McClearn, 1990).

Unfortunately, only in recent years “ behavioural genetic and developmental approaches make the potential for collaborative studies quite promising”(Reiss, 1993). Genetics is increasingly been used to explain developmental processes on psychological functioning-both normal and abnormal.

Plomin (1994), argue that genetic research on behavioural dimensions and disorders not only indicates genetic influence in developmental psychopathology but also provides the best evidence for the importance of the nongenetic, environmental influence. In addition, Geary and Bjorklund (Child Development, 2000, p. 57) argues: “ Genes provide the instructions for guiding the development of the core phenotypes, such as body structure and social behaviours, of the species”.

However, as people are in a constant interaction with their environment, environmental factors such as culture, family and prenatal environments need to be examined in order to be able to estimate the genetic contributions to behavioural traits (Mandler, 2001). Hence, for the purpose of this essay, both environmental and genetic factors and the interaction between the two will be discussed and critically evaluated in order to examine what can cause a child to develop an aggressive and anti-social behaviour.

The child's behaviour will be explored from two developmental perspectives: 1) the Mechanistic World View (behaviourism, embracing the social learning) and 2) the Natist view (embracing the genetic view). Further, the development of language will be analysed, as it clearly proves the interaction of nature-nurture in human development. Before proceeding to discussing the events this essay will begin with a definition of aggression and anti-social behaviour.

“ Human aggression is any behaviour directed toward another individual or thing that is carried out with the proximate intent to cause harm”. Bushman ; Anderson 2001, Baron ; Richardson 1994, Berkowitz 1993, Geen 2001).

Moreover, according to Coie and Dodge (1999), aggressive behaviour appears to be a universal characteristic of the human species and a typical factor of antisocial behaviour (M. Knapp, S. Scott, J. Davies, 1999). Thus, the definitions of aggressive and antisocial behaviour vary and are by nature culturally determined and influenced by the observation of the observer (Walters and Parke 1964, cited in Coie and Dodge, 1999, p. 782).

In terms of frequency of aggressive acts, Cairns (1979, cited in *ibid*, p. 780) argues that pre-schoolers are the most aggressive, with a steep reduction in frequency as children mature (Coie and Dodge, 1999, p. 780). The most dangerously aggressive period has been found to be within late adolescence and early adulthood (Coie and Dodge, 1999, p. 786). Family and twin studies suggest genetic links such as a difficult temperament (Plomin, 1983, cited in *ibid*.) aggressive relatives (DiLalla ; Gottesman, 1989 cited in *ibid*.

neuropsychological deficits (e. g. , attention deficit disorder) (Moffitt, 1993, cited in *ibid*.) and low IQ (West, 1982, cited in *ibid*.) etc. Social learning
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theorists and the information-processing hypothesis state that aggressive behaviours are acquired through social interactions (see Dodge, 1986). A prognostication of early aggressive behaviour appears to be the quality of the parent-child relationship and the interaction within contextual stressors (Coie and Dodge, 1999).

Lemma (1998) argues that development is the product of a dynamic interaction between the individual and the environment, which includes the possibility the individual to experience a strong determining influence from the environment he co-creates with others. Therefore as the mother and father are the adults and presumably more aware of social constructs than is the child, their behaviour could encourage the child's aggressive behaviour. Moreover, a study by Cleveland & Harrington et. al. (2000), showed supported on the effect that family structures can have upon the children's behavioural problems.

The study applied behavioural genetic methodology to 4 groups: 1) 2-parents full siblings, 2) 2-parents half siblings, 3) mother-only full siblings, and 4) mother-only half siblings. The results showed that behavioural problems in children were based 81-94% in genetic influence for those children with 2-parents, full sibling and with the mother only half sibling. In contrast, shared environmental influences accounted for 67-88% in behavioural problems between the 2-parent, full sibling and mother-only full sibling groups.

Therefore sometimes the parents, vocally expresses both their disapproval of the child's behaviour, and their limited understanding of the possible causes.

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Hence, they look unaware of the influence that the social interaction can cause to their child, and how certain patterns of behaviour could be inherited through the cultural norms and values and shape the behaviour of human being. (Kamiloff-Smith, 1997, & Oatley-Jenkins, 1996). According to the behaviouristic theory, aggression is a moulded learned behaviour.

For example, a father may tell his son to beat up the school bully who is picking on him. As a result, the boy learns to use violence in order to deal with certain situations. When people brought up in a society, they learn certain customs and traditions. Additionally Mark Bornstein (1999), argue that the contrast between collectivist and individualist cultures has a lot to do with the mother-child interaction, as it has been found that in individualist cultures people tend to keep an emotional distance from their families and general from their beloveds.

This can have an effect upon the child's development, as the mother's role is to ensure socialisation and to redirect the undesirable behaviour through sanctions and rewards (Butcher, 1997) rather than letting the child fully autonomous to develop a misunderstanding idea about values and social norms. However, not all individuals conform, and there are variations within the lifespan of an individual as well as between individuals within the same family, which emphasises individual differences.

Harris, -Judith-Rich (2002), by discussing behavioural genetics based on the role of nature over nurture in child development, showed a great support on a specific learning theory of development called the group socialization theory. According to this theory, children separate how to behave at home

and how to behave outside the home. Children learn to behave outside the home by identifying with a group of people they see as being similar to themselves and taking on the norms of that group.

In addition, all different social groups, such as neighbourhoods, schools, media and parents can have an affect upon the children's behavioural development. Thus, the influence that media can cause to the children's behavioural development in our days is a major factor, which has been wildly examined. Many researches have validated the importance of television exposure on the children's development of aggression. In one study done at Pennsylvania State University, preschool children were observed both before and after watching television.

Children who watch the violent show, even just funny cartoons were more likely to hid out at their playmates, argue and disobey class rules. (Internet, ' violence on television'). Real life studies have also found that the ones who'd watched a lot of TV when they were eight years old were more likely to arrested for criminal acts as adults (Eron). Social influence on people's behaviours, can be explanted be the developmental behaviouristic approach. Slater and Muir (1999) suggest that the development is a gradual, continuous growth process in which the infant responds to environmental inputs.

Based on their point of view the child's behaviour can be explained as a response to or imitation of environmental stimuli. Thus, a child's undesirable behaviour sometimes maid be reinforced by adults, who behaving unfavourably themselves. However, twin and adoption studies looking at

possible genetic factors in criminal and anti-social behaviour as well.

Unfortunately thus, as most modern researchers acknowledge that family studies are unable to separate possible genetic and environmental influences, it has been argued that twin studies are similarly unable to disentangle these influences. *Journal of Mind and Behaviour*, 2001, Vol. 22(2): 179-218).

Hence, the above view on the genetic analysis of aggression leaves more space for the explanation of aggression and anti-social behaviour on the social learning theorists. Bandura (1963), via observational learning processes, found that children who had witnessed an adult hitting a large inflated BoBo doll with a mallet, respond more aggressively towards the doll than the children who had not observed the scenario.

A second study by Bandura (1965) tested the effect that rewards and sanctions would have on children observing the same scenario. He found that sanctions works as a deterrent in imitating aggressive behaviour. This was taken as an indication that sanctions are more powerful influence than rewards. However observing aggressive behaviour in adults, does not always ignite aggressive behaviour in children. According to Lemma (1998) observing aggressive behaviour in adults can some times instil fear and cause suppression of emotions rather than expression.

Hence, it is questionable if aggressive behaviour in children is a consequence of imitating adults. Pavlov's theory of classical conditioning, could give an answer to the above dilemma. For example, if a child experiencing lack of attention and each time that he becomes aggressive his mother shows

attention to his/her undesirable behaviour, acting aggressively could be for the child a way to attract his/her mother's attention and concern. Moreover, social interaction theory provides an explanation of aggressive acts motivated by 'higher goals'.

So, aggression from the child might have some rational goal behind it, such as for example, 'punishing' the provocateur in order to reduce the likelihood of future provocations. This theory provides an excellent way to understand recent findings that aggression is often the result of threats to high self-esteem personalities (Baumeister et. al. 1996, Bushman ; Baumeister 1998). Nevertheless, theoretical standpoints vary, and thus, so will the interpretation of a child's aggressive behaviour.

A study by Simonoff et. al. 1998), supports that "oppositional and conduct disorders are a heterogeneous collection of disruptive behaviours associated with diverse risk factors and varying outcomes. Data from 4348-16-yr-old male twin pairs (268 monozygotic, 166 dizygotic) and their mothers, in the Virginia twin Study of Adolescent Behavioural Development, are used to explore the relative importance of genetic and environmental influences on 4 disruptive subtypes: Property violations (PVs), status violations, oppositional behaviour (OB), and aggression.

Striking differences between results according to mother and child ratings were found, indicating the need to consider carefully the origin of ratter differences. Child ratings indicate support for a general genetic liability, with greatest influence on PVs, OB, and Aggression. Maternal ratings suggest that the genetic factors influencing conduct disorder behaviour are more specific

to the behavioural area, with the stronger genetic influence on the PVs and Aggression". (Journal of Abnormal Child Psychology, 1998; Vol 26 (6): 495-509, Abstract). Based on the above research, aggression estimate as a genetic factor.

Additional, geneticists such as Robert Plomin (1997), support the Nativist theory, attributing temperament, intelligence and mental illness as factors of inheritance. Plomin (1999) and Scarr (1997) argue that genes predispose children to their interests and cognitive abilities, inferring that children will learn what they are capable of. This is seen when some children learn more than others, given the same exposure or coming from different social backgrounds. In addition a study by Kagan (1973), support that children should be appreciated as independent organisms, whose subjective reality is motivated by an innate cognitive bility and shaped by environmental influences. By comparing the cognitive abilities of American children with the cognitive abilities of Guatemalan children, he argued, that " the mind, like the nucleus of a cell, has a plan for growth and can transmute a new flower, and odd pain, or a stranger's unexpected smile, into a form that is comprehensible".

Hence, " The child explores the unfamiliar and attempts to match his ideas and actions to some previously acquired representation because these are basic properties of the mind" (Kagan, 1973, p. 12). From Kagan's summation, it is clear that the child's behaviour can be recognized as an ' exploration of the unfamiliar' and as an expression of ' some previously acquired representations' driven by an innate curiosity. His thesis can also reduce the tendency to cast blame on the child when he expresses a

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behaviour contrary to the social norms. Hence, according to Kagan, the child's behaviour can be the product of an innate drive, which does not denote an aggressive tendency.

On the other hand, sometimes adults reaction could also reinforce the unwanted behaviour of aggression, as human being, have an innate ability to make representations of the external world (Kamiloff-Smith, 1996). The acquisition of language has been implicated as an explication of the gradual decline in aggressive and antisocial antics. Cantwell, Baker and Mattison (1979) showed supported to this perspective, as they found that language deficits could prevent the child from adequately communicating his needs, and as a result be a contributory factor to emotional outbursts and behavioural problems.

Hence, physical expression of aggression decreases whilst verbal expression increases with the acquisition of language. This happens usually between the second and fourth year of life (Cairns, 1979). Fodor (1985), Argue that an innate language acquisition predisposes the child to developing the complex grammatical structure of language. Further, he proposed that human beings are pre-programmed to develop 'innately specified modules' (mental organs) not only for acquiring language, but also for processing faces, numbers, space, to socially interact and to acquire a theory of mind etc. (Kramiloff-Smith, 1996, cited in Muir, 1999, pg.).

From this supposition, the child's behaviour can be primarily attributed to inherent motivations, rather than an imitation of external influences. In contrast to that, Shatz (1985), stated that since children usually managing to

learn the particular language to which they are exposed, environmental influences has to be responsible for possible cognitive problems in childhood. However, parents are only able to recognize a behavioural problem on their children's expression, around their third year of age (Jenkins, Bax, and Hark, 1980), which is the time that the child starts to develop verbal skills.

As development involves three recurrent phases (Kramilloff-Smith, 1996), where during the first phase the focus is primarily on external cues, on the second phase the dynamics of the system take over and the third phase involves the reconciliation of the internal and external representations, the development of aggression in children can be the product of the interaction between external and internal representations. Moreover, Coie and Dodge, (1999), point out that the overall reduction in aggression cannot be attributed to language alone.

Additional factors inevitably play a part, because language can also equip children with a tool for verbal threats, and insults. Mischel (1979, cited in *ibid.*) arguing in line with Kamiloff-Smith and Kagan suggests that, as children acquire cognitive strategies through interpersonal exchanges (with parents, family members, peers, school classroom and playground etc.) they can learn how to express their feelings in a more acceptable manner, and how to fulfil some of their needs themselves.

This consequently enables the avoidance of antisocial behaviours through the reinforcement of acceptable behaviours. Berkowitz (1989, 1990, 1993), has proposed that aversive events such as frustrations, loud noises, uncomfortable temperatures and unpleasant odors produce negative affect.

Negative affect produced by unpleasant experiences automatically stimulates various thoughts, memories, expressive motor reactions and physiological responses associated with both fight and flight tendencies.

The fight associations give rise to rudimentary feelings of anger, whereas the flight associations give rise to rudimentary feelings of fear. (Anderson and Bushman 53 (1): 27). Tedeschi & Felson, (1994, cited in Coie and Dodge, 1999) suggest that aggressive behaviour has many adaptive characteristics and has evolved to embrace a broad social communication system. This includes 'multiple topographies, antecedents and functions' (Coie and Dodge).

In order to decipher the wider implications of the adaptive and maladaptive functions of aggression it is necessary to integrate its characteristics with other antisocial archetypes (Coie and Dodge). However, as development appears to occur gradually in a series of phases, which are influenced by an interaction with the environment, a behavioural genetic view appears to be necessary, for the explanation of child development.

Pre-schoolers are often perceived as being the most aggressive humans, and this perhaps owes more to unresolved needs, boredom, an exploration of impulses or to Western civilisations socio-economic demands which inevitably place a strain on the fulfilment of the family's needs, rather than to pre-schoolers themselves. As children acquire cognitive skills and gain independence aggressive outbursts appear to decline until adolescence. Perhaps it is unrealistic to expect children to conform to all forms of socialisation without some objection.

It is conceivable how such an objection could highlight the need for some individuality. Furthermore, children do not share adults' cognitive abilities, language proficiency, and aptitude for rationality. Thus, emotional expression can be viewed as a form of communication. However, an aggressive mode of communicating can be detrimental, especially during adolescence and early adulthood, and therefore requires the administration of appropriate guidance, if the aims are to meet.