Controversial Issues in Human Development: Nature versus Nurture

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The dichotomy of nature versus nurture has been at the forefront of understanding human development since its inception. Developmental researchers continue to question whether human development is a result of biological forces (the nature perspective) or environmental forces (the nurture perspective) (Broderick & Blewitt, 2010). However, studies in this area appear to generate more questions than answers, ultimately resulting in the current widespread belief that the process of human development involves the complex interplay of both perspectives (Broderick & Blewitt, 2010). In order to gain insight into each side of this dichotomy, a detailed examination of both perspectives is necessary.

McCrae et al. (2000) adopt the position that biological forces are at the root of human development. Specifically, McCrae et al. (2000) discuss the notion that child temperament is inherited and immune to environmental influence. The personality factors in the five-factor model, as well as other important studies pertaining to parental influence and cross-cultural similarities, provide compelling evidence for the nature perspective of human development (McCrae et al., 2000).

Talwar, Carlson and Lee (2011), adopt the position that environment is key to determining a child’s executive functioning capabilities, behaviour patterns as well as their levels of self-control and self-regulation. By comparing a group of children raised in a punitive environment and another group raised in a non-punitive environment, Talwar et al. (2011) present results that conclusively show how environmental factors have an inordinate effect on the disposition and maturation of a child. Environmental, and not genetic factors, determine a child’s mannerisms, academic achievements, and sociability, proving that nurture provides more
deterministic factors relative to a child’s development. This paper strives to determine which perspective of this dichotomy best fits the particular case study outlined below.

**Case Study**

Trevor is 9 years old and has been referred by both his teacher and parents. He presents with poor academic skills and has a limited attention span in class, often resulting in behaviour problems. His classmates make fun of him in school and he has a hard time resolving social conflict, choosing to hit or bite classmates instead of using his words. Overall, his teacher has observed that he is generally disliked by his peers, and has few friends. His teacher believes he has ADHD, based on his lack of focus and high level of hyperactivity. Trevor’s mother agrees that he has been hyperactive from a very young age, but is hesitant to accept that he has ADHD.

Trevor’s younger sister Suzy is 6 years old, very well liked, and academically successful. She receives a lot of positive attention from their parents, and Trevor knows she is a favourite. She often has friends over, but Trevor is never involved in these play dates. Instead, Suzy and her friends ridicule him. He often disobeys and breaks household objects during tantrums, resulting in his parents constantly punishing him. Both parents work and have a combined income of $38,000 a year. The mother admits to spanking Trevor, as well as other forms of corporal punishment. Although these types of punishment seem to have little effect on him, she admits to not having the time or energy for any other form of punishment for his misbehaviour.

**Nature Perspective**

The nature perspective emphasizes the role of biological processes in human development (Broderick & Blewitt, 2010). Trevor’s aggressive demeanour, his inability to concentrate, and his general disregard of rules are arguably caused by organic developments. In this section, we will examine the biological factors of temperament, genetics, and brain functions
that can be said to be the source of Trevor’s maladaptive behaviour. We will terminate with a treatment plan for Trevor, from the nature perspective.

**Temperament**

First, there is widespread agreement that babies are born with innate temperaments, that is, particular ways of thinking and behaving (Broderick & Blewitt, 2010; McCrae et al., 2000). Personality traits are defined as “a set of traits that may be likened to the temperament characteristics of infants” (Broderick & Blewitt, 2010, p. 421). McCrae et al. (2000) suggest that personality traits, like temperaments, are inherited and follow intrinsic paths of development that are independent of environmental influences. Through studies of parental influence and structural invariances across culture, McCrae et al. (2000) provide compelling evidence that temperament is hereditary.

**Parental influence.**

Studies of parental influence provide evidence for the belief that temperament is inherited. Kagan and Moss (as cited in McCrae et al., 2000) conducted a study in which maternal characteristics were examined during three age periods between infancy and ten years, and children’s personalities were later assessed between the ages of 19-29. Findings indicated that only 6% of the relevant correlations reached statistical significance at the p <.05 level, suggesting that if parenting had any effect on personality development, it was extremely subtle (Kagan & Moss, as cited in McCrae et al., 2000). Also, adoption studies have found that the temperament of a child has little resemblance with those of either their adoptive parents or adoptive siblings (Broderick & Blewitt, 2010), confirming the minimal effect of shared environment on the development of temperament. The notion that parental influence has a minimal effect on child temperament explains the difference between the temperaments of
Trevor and his sister Suzy; despite the fact that they share the same environment, they have very different temperaments.

**Structural invariances across culture.**

Several studies provide evidence that temperament transcends culture. In cultures ranging from Estonia to Malaysia, researchers have reported clear duplications of the personality factors characteristic to the five-factor model: neuroticism, extraversion, openness, agreeableness and conscientiousness (McCrae et al., 2000). These innate personality traits appear to be shared by others around the world. Should environment have an effect on temperament, individuals from different cultural backgrounds ought to have differing temperaments, emerging from their individual environments.

Therefore, studies pertaining to parental influences and cross-cultural similarities provide clear evidence that temperament is immune to environmental influence (McCrae et al., 2000). With this notion in mind, it is clear that Trevor’s lack of openness and agreeableness is innate and will be very difficult to change. We will now explore another biological process that is believed to be a precursor to Trevor’s behaviour, genetics.

**Genetic Mechanisms**

Molecular geneticists have identified a number of gene variations that are believed to be related to difficult temperaments in children. Specifically, the presence of the long allele form of the dopamine receptor d4 is associated with high levels of aggression, novelty-seeking and attention deficits (Broderick & Blewitt, 2010). Also, some personality disorders appear to be more heritable than others, when added factors are also present. For instance, when antisocial behaviours are accompanied by early-onset hyperactivity and poor peer relationships, heredity seems to play a larger role than it would without these additional influences (Broderick &
Blewitt, 2010). Therefore, the operation of genes may also be at the root of Trevor’s maladaptive behaviour.

**Brain-Related Processes**

Several areas of the brain are believed to be responsible for Trevor’s issues, namely his aggressive behaviour and attention difficulties. Brain studies have determined that reticular formation controls arousal and attention levels, while the hypothalamus regulates aggression (Broderick & Blewitt, 2010). Furthermore, myelination and maturation of the reticular formation and frontal lobe area, occurring at approximately seven or eight years of age, contribute to a child’s increased ability to inhibit inappropriate responses, ignore external stimuli, and improve attention, concentration and planning abilities (Broderick & Blewitt, 2010). Therefore, as a result of brain maturation, believed to occur by the age of eight, Trevor should have developed the ability to better control his behaviour, giving credibility to the belief that Trevor’s difficulties are rooted in brain abnormalities. Without proper brain functioning, any amount of intervention utilizing environmental resources will have no significant effect on behaviour, as the brain is the cornerstone to healthy functioning (Broderick & Blewitt, 2010) and thus is at the root of Trevor’s difficulties.

**Trevor: Treatment Plan**

Since temperament and other genetic mechanisms play a significant role in behaviour, and are immune to environmental influence (McCrae et al., 2000), Trevor’s aggressive behaviour would appear to be almost impossible to change. However, since brain functioning is also an important precursor to behaviour, a counsellor following the nature perspective would suggest that Trevor undergo brain imaging tests to determine if maladaptive development, injury, or infection may have occurred (Broderick & Blewitt, 2010). Also, psychopharmacological
remedies that have been proven to assist with childhood aggression and hyperactivity would be prescribed. Specifically, the mood stabilizers carbamazepine and lithium, and the atypical antipsychotic risperidone have all been associated with the effective treatment of childhood aggression (Findling, 2003). Also, the stimulant methylphenidate has been proven to be effective for the reduction of aggressive behaviour in children with a primary diagnosis of Attention Deficit Hyperactivity Disorder (ADHD) (Findling, 2003). From this review, we can conclude that the nature perspective vetoes the naive perspective of environmentalism (McCrae et al., 2000). That is, with a biological approach to Trevor’s maladaptive behaviour, successful intervention is maximized.

**Nurture Perspective**

A child’s environment shapes and molds who they are, as well as who they will be. Numerous factors can have an influence on behaviour and cognitive advancement. Trevor presents with a myriad of symptoms that suggest deficiencies and inconsistencies in his environment, resulting in an inability to self-regulate, which is an important predictor of internalization of social rules, moral standards, and appropriate behaviour (Talwar et al., 2011). This section strives to explain Trevor’s presenting problems within the framework of his upbringing: through social influences, punitive environment, and gendered treatment.

**Social Influences**

Trevor’s family has an income that puts them in a low socioeconomic bracket, making Trevor susceptible to environmental conditions that could have a negative effect on his development. Conditions such as poverty, low levels of parental education, stress on family resources, and neighbourhood conditions (Broderick & Blewitt, 2010) can have an adverse effect on the development of a child’s self-control (Talwar et al., 2011). Poor self-control is linked to
aggressive behaviour, poor cognitive functioning, and antisocial behaviour (Broderick & Blewitt, 2010). These environmental factors can also cause stress in a child’s life, which can affect cognitive functioning and processing capabilities in several areas: academically, socially and behaviourally (Talwar et al., 2011). It may be argued that organic influences are the cause of Trevor’s behaviours; however, when considering his environment, it is clear that the interactions he experiences have an adverse effect on him. It is important to note that there is no single social influence explaining why a child is aggressive, antisocial or noncompliant. Rather, it is a slow accumulation of interactions with different environmental influences that shape the regulatory processes until there are noticeable deficiencies (Broderick & Blewitt, 2010).

**Punitive Environment**

In the initial interview, Trevor’s mother admits to using spanking, as well as other forms of corporal punishment, as a technique for trying to manage Trevor’s disruptive behaviour. “Negative controlling strategies that are power assertive undermine the emerging internalization and self-regulation of the child” (Talwar et al., 2011, p. 806). Only administering punitive punishment, as opposed to guiding the child to master the behaviour in question, can have adverse effects on cognitive development and cause disruptive behaviour (Talwar et al., 2011).

Trevor’s lack of self-regulation and his presentation of maladaptive behaviour are negatively affecting him academically. Teachers consider competent executive functioning (EF), which is a cognitive construct that encompasses a variety of sub functions such as inhibition, working memory and set shifting (Talwar et al., 2011), as vital for controlling impulses, attention, emotions and overall academic success. Research shows that a harsh punitive environment may have long-term detrimental effects on a child’s EF (Talwar et al., 2011). Children exposed to a punitive environment perform significantly worse on EF tasks and are at
risk for behavioural problems that impact their lives socially and academically (Talwar et al., 2011). Should a parent choose to utilize punitive punishment on their child, they are not verbally explaining the reasoning behind the punishment and thereby diminishing the verbal interactions a child needs to enhance their cognitive and verbal development (Talwar et al., 2011).

Talwar et al. (2011) found that punitive parental discipline has negative effects on social cognitive performance as well. As we recall, Trevor has a hard time making friends, and cannot adequately navigate simple social situations. The more physical punishments a child experiences, the higher their sense of anxiety, and the more aggressive they tend to be towards family members as well as peers (Broderick & Blewitt, 2010). In conjunction, the more a child is hit, spanked or paddled, the more likely they are to exhibit increases in aggressive and antisocial behaviour (Broderick & Blewitt, 2010). Higher levels of corporal punishment also lead to more acts of impulsivity (Talwar et al., 2011), like breaking things during fits, hitting peers when angry and refusing to do school work when confused. A child who faces regular punitive punishment will be less compliant, and will not be able to internalize rules and standards, and will suffer from lower self-control (Talwar et al., 2011). Talwar et al. (2011) also state that this lack of self-control and self-regulation will only increase with age; although these punishments may seemingly work on younger children, as the child ages the effects of these punishments will be more obvious as the maladaptive behaviours increase.

**Gendered Treatment**

When comparing Trevor and his sister Suzy, it seems odd that two children who appear to be complete opposites were raised in the same environment. Although this noticeable difference may seem like it could be attributed to organic differences, it instead can be explained by the gendered way in which children can be raised. Arguably, Suzy has the same presenting
social influences as Trevor, but because of her gender, the way she has been treated by her parents and other people in her environment could be extremely different.

As noted in the previous section, punitive punishment has a negative effect on EF, verbal skills and cognitive development (Talwar et al., 2011). Parents tend to talk more, use more supportive speech and discuss their emotions more with their daughters (Broderick & Blewitt, 2010). This fact increases the likelihood that Suzy is having her punishments explained to her, thereby increasing her verbal comprehension, EF functions, and ultimately, her academic abilities (Talwar et al., 2011). Parents tend to have different expectations of their sons and daughters, often teaching their daughters how to be more intuitive to people’s needs, deal with conflict more effectively, and express their emotions more openly (Broderick & Blewitt, 2010). Trevor has not learned how to deal with conflict in social situations, resorting to the punitive forms of punishment he has learned in the home, instead of tapping into the perspectives and feelings of others. His impulsivity leads to undesirable behaviours, which likely influences his parents in their treatment of him (Broderick & Blewitt, 2010). Because of these differences in treatment, Trevor consequently displays aggression, antisocial behaviour and an apparent vehemence for his sister, as she appears to be more liked by both family and peers.

Trevor: Treatment Plan

Conduct problems in children are serious, and it is recommended that treatment begin as early as possible (Broderick & Blewitt, 2010). Trevor is nearing a critical age in his maturation; if his behaviours are not reversed they will have progressed to a level comparable to a chronic illness (Broderick & Blewitt, 2010), meaning that his behaviours will be harder to deal with and less likely to be reversed. A suggested multifaceted approach is “The Incredible Years” (Broderick & Blewitt, 2010, p. 242) prevention program that involves the parents, the child and
the school. Parent training involves topics such as: parenting skills, discipline, communication within the family, anger management, conflict resolution and how to communicate with your child’s school (Broderick & Blewitt, 2010). Children utilize toys, videos and small groups to practice different social and emotional skills (Broderick & Blewitt, 2010). Increased self-regulation and self-control will come with practice of different skills, eventually increasing Trevor’s ability to achieve academically, as well as with his peers. In conjunction with the parent and child training, Trevor’s teachers would use videos, group discussions and practical experience to develop management techniques for difficult behaviour problems within their classrooms (Broderick & Blewitt, 2010). This multifaceted approach will help improve Trevor’s environment on many levels, as well as on a personal level, effectively setting him up for future academic and social success.

Summary

From the arguments presented in these articles, the nurture perspective provides the most compelling treatment plan for Trevor’s presenting problems. The nurture perspective takes a holistic look at Trevor’s presenting problems, suggesting the involvement of numerous factors in his treatment plan, while the nature perspective only posits medical intervention as the preliminary method of treatment. With a multifaceted treatment plan based on environmental changes, the probability of successful intervention is maximized.

Studies suggest that environmental factors may also change behaviour in a way that is similar to medical intervention, by directly altering brain processes (Broderick & Blewitt, 2010). Because Trevor’s mother seems hesitant to accept his teacher’s supposition that he has ADHD, she may also be opposed to him receiving medication. Instead, it would be beneficial to present her with evidence suggesting that a changed environment may alter Trevor’s brain processes,
which will improve his behaviour, sociability and cognitive skills. By involving the parents and teachers, it is ensuring positive growth in many aspects of his environment.

Lastly, it could be argued that it would be easier to improve Trevor’s environment if he were medicated as well, as it may make him more compliant. However, for younger children such as Trevor, the behaviour must be extreme, aggressive, unceasing, and pathologic to necessitate a pharmacotherapeutic intervention (Findling, 2003). The side effects that medication could present may be more detrimental than the presenting behaviour itself, therefore, medical interventions should be a last resort (Findling, 2003). Educational group work, classes, videos, and family counselling could be very effective for Trevor and his family. It may help them communicate more effectively, the parents could learn more appropriate ways of punishing Trevor, it could promote Trevor’s social and academic growth as well as reduce tension and stress in the family. Using a treatment plan that utilizes the nurture perspective is the least physically invasive, most holistic and overall has the best chance of success.

**Conclusion**

Although traditional developmental theories often focus on the importance of one perspective, research has proven that most genetic and environmental processes interact, affecting both one another, as well as the behaviour in question (Broderick & Blewitt, 2010). Modern multidimensional theories take into account the complexity of this interdependency, and promote treatment plans that reflect the need to attend to the client’s environment, as well as genetic predispositions (Broderick & Blewitt, 2010). A treatment plan based on multidimensional theory is the most comprehensive way to address a client’s presenting problems, as an oversimplified view of the “either-or-dualism is truly out of date” (Broderick & Blewitt, 2010, p. 52).
References


