Why Genes Determine Parenting and Children's Development

How Genes Affect How Parents Treat Their Children

Genes determine how children or parents react to the environment, and the effect of genes will predict more of children's development. The following paragraphs will investigate in detail the relationship between "parents' genotypes and children's genotypes" and "parents' phenotype and children's phenotype." Genotype can be defined as the genetic makeup of an individual. Phenotype can be defined as one's personalities and one's appearances. A heritable genotype can be passed from parents to children. Children's genotypes will affect their phenotypes. This process is called a maturational sequence. That is, new structures continuously emerge from the maturation, from genotype to phenotype. Therefore, the development unfolds based on the transitions from genotype to phenotype. Genes are like the helmsman of a big ship that organizes the direction of children's development and ways of interacting with the world.

Therefore, children with different genotypes may actively seek out different environments that foster their genetic propensities. Some examples below are illustrated how children's genotypes affect their phenotypes through using evocative gene–environment correlations and active gene– environment correlation. Evocative gene–environment correlation refers to how children's different genotypes evoke different responses from the environment. The evoked responses will then shape children's development. For example, children's genotypes may make them become operative and attentive preschoolers. Attentive preschoolers will receive more positive responses from their parents, compared with uncooperative children. Those positive or negative responses, in turn, will affect children's environment. In addition, the active gene–environment correlation means that children actively choose their own environment based on their genotype differences. In other words, children with different phenotypes will choose different environments based on what they find stimulating and comfortable. For example, children's phenotypes influence which universities children want to attend, what major they want to pursue, or what kind of relationship they expect. Thus, these factors determine the environment based on children's phenotypes.

Moreover, the parents' genotypes may lead to the parents' phenotypes. The phenotype differences may cause parents to impose different parenting when raising their children. For example, a low conscientiousness parent tends to act before thinking and to use low discipline to shape their children. This makes their children have low inhibitory control. The parenting, then, as previously illustrated, may cause the children to have different personalities.

Another gene–environment correlation that illustrates how parents' genotype affect parents' phenotype and then affect their parenting is *the passive gene–environment correlation*. Here, passive gene-environment correlation means that children passively accept the genes and the environments their parents provide them. More specifically, children's genes correlate with their parents' genes, and their parents' genes are related to what kind of rearing environment they provide to their children. To illustrate this with an easy example, parents who love reading may provide their children with more opportunities to read, thereby creating a "reading" environment. Then the children may come to enjoy reading or become good readers because they have the "reading" genes and experienced a positive reading environment. Even if children are not skilled readers at first, the "reading" parents may provide a more enriched environment that could foster children's reading abilities. As a result, the children will become skilled readers because of their genes and environment. Thus, the passive gene–environment correlation causes the children passively accept parenting which is affected by parents' genes.

Prosocial behavior also helps illustrate "how genes affect the environment." *Prosocial behavior*, behavior that is intended to benefit others, is determined by parenting behaviors. That is, positive parenting (parents' warmth, autonomy support, use of reasoning, and induction) are positively correlated with children's prosocial behavior, whereas negative parenting (use of power-assertive discipline such as corporal punishment) are negatively correlated with children's prosocial behavior. Genes will determine both parenting and children's prosocial behavior. More

specifically, parents' genotypes may affect their own phenotypes, and this then shapes their own parenting behaviors. For instance, they may use positive parenting (e.g., high warmth toward their children), which results in children's prosocial behavior. The parents are then more likely to react prosocially to their prosocial children, and prosocial children are more likely to elicit positive responses from their parents. Ultimately, the children will then become more social. In another way, parents' genotypes may determine their children's genotypes. Then children's genotypes will lead to prosocial behavior. Parents will then react prosocially to their prosocial children. This makes children become even more prosocial. Overall, the prosocial children become more prosocial, whether as a result of the parents' genotypes or the children's own genotypes. Thus, genes play an important role in shaping children's prosocial and other behaviors.

To summarize, children's genes will determine children's phenotype and then determine the parenting behaviors through active gene–environment and evocative gene–environment correlations. In addition, through passive gene–environment correlation, parents' genotypes will affect both parents' phenotypes and their parenting. In other words, how parents treat their children will affect their development. Therefore, parenting and children's development are greatly influenced by genes.

Individuals' Different Susceptibility

While parenting has some influence on children's behaviors, children's genes will determine whether the children will be more or less affected by parenting.

To start with, extravert and introvert children usually have different susceptibility to parenting behaviors. Past literature about twin studies suggested that parents' introversion and extraversion personalities are highly heritable to their children. Therefore, children's genetic makeup determines whether they are introverts or extraverts. In addition, parenting behaviors influence introverted children to a greater extent than extraverted children. This may be because introverted individuals are likely to be conditioned, which means they adapt to the environment faster, according to the research involving twin studies. Therefore, introvert and extravert children (whose determination depends on by their genetic makeups) have different susceptibility to the family environment.

From a broader perspective, the example of introvert and extravert children highlights how some individuals are born with different levels of sensitivity to the influence of parenting. This means that children have different susceptibility in accepting environmental differences. Some children have some "plasticity genes" that make them more sensitive to all kinds of parenting, bad or good. More specifically, there are resilient children and plastic children. Defined by a Swedish idiomatic expression, resilient children are the "dandelion children" who will survive and thrive in either bad or good environments, whereas plastic children are the "orchid children" who are vulnerable to both adversity or positive experiences. Evolutionary psychologists would argue that children's plasticity characteristics are evolutionarily favored. This is because parents are shaped by natural selection, allowing that they can bear children with different plasticity. Therefore, if one effect of parenting is proven to be disadvantageous, children who are stable and not sensitive to parenting will not have to bear the cost of a bad parenting. Thus, children are born with different susceptibility to either bad parenting or good parenting, which can help to maximum benefits evolutionarily.