ENCYCLOPEDIA
on Early Childhood
Development

The Complex Causes and Modification of Gender Development: Commentary on Hanish & Fabes; Leaper; Bigler, Hayes & Hamilton, and Halim & Lindner

Sheri A. Berenbaum, PhD, Adriene M. Beltz, MS

The Pennsylvania State University, USA

August 2014

Introduction

The authors of the papers[1-4] in this section consider ways in which boys and girls differ, and how those differences stem from social factors and can be reduced by social changes. But, the causes of and modifications to behaviour are complex, as are the links between science and social policy.

Research and Conclusions

a. Where we agree

As documented in the four papers[1-4] in this section, it is clear that a variety of social agents (peers, parents and schools) contribute directly to some of the differences between the sexes, and that these agents also encourage children to socialize themselves in gendered ways. It is also clear that social practices often limit the development of both girls and boys, and that children need to be prepared to interact with people who are different than they are – so it is important to find ways to optimize the development of all children. As such, we agree with many of the interpretations provided by the authors.

b. Where we disagree

The authors focus on socialization effects on gender-related attitudes and cognitions (thinking about gender), but links between attitudes and behaviour are complex, and there is a large social psychological literature on the moderators of such links.[5] Gendered attitudes are sometimes, but not always, related to gendered behaviour, and most associations are surprisingly modest in size.[6] Even then, the causal path between attitudes and behaviour is not clear. Classic social psychological research shows that attitudes may change as a result of behaviour, rather than the reverse.[5] It is, therefore, important to identify conditions under which gender-related attitudes influence and are influenced by gender-related behaviours.

c. What is missing?

The papers in this section[1-4] cover a number of important influences on gender development, with an emphasis on the average child. But, gender development is nuanced, depending on biology, developmental status and context.

The role of biology. Children do not enter the world as blank slates, and there is substantial evidence that biological factors influence gender development. Sex hormones play a particularly prominent role, with prenatal exposure to high levels of male-typical hormones associated with behaviour that is shifted in a male-typical direction.[7,8] For example, compared to girls with typical hormones, girls who have been exposed during gestation to high levels of male hormones (e.g., androgens) tend to be more interested in and engage more with male-typed activities across the life span: As children, they play more with toys such as legos and vehicles;[9,10] as teenagers and young adults, they are more engaged in sports and electronics, and are more interested in occupations that involve things rather than people;[8] as adults, they are more likely to have jobs typically occupied by men.[11] This suggests that at least some differences between typical boys and girls stem from the difference in the levels of their sex hormones during early development (and the corresponding effects of these hormones on the developing brain). There are other aspects of biology that play a role in gender development (e.g., hormones at puberty, circulating

hormones in adulthood).[12]

These biological influences on gender development mean that socialization does not operate in a vacuum. Socialization may magnify biological predispositions, so small biologically-influenced differences become large behavioural differences. Alternatively, socialization may counteract biological predispositions; for example, girls who have male-typed interests because of prenatal exposure to high levels of androgens may receive pressure to be female-typical, although little is known about the effectiveness of such socialization.[13,14] This topic represents an exciting research opportunity; elsewhere, we have provided examples of how work on gender development pursued from a socialization perspective could be enhanced by attention to biological processes.[15]

The role of development. It is important to remember that psychological aspects of gender are not static. Gendered characteristics develop across time, and socialization effects may vary with children's developmental status. For example, psychological changes at adolescence might modify the effect of socialization experiences, given the increased autonomy, peer contact and parent-child conflict at that time compared to childhood.[16]

The role of context. Much gender socialization occurs within families. Important differentiations may be between sons and daughters, rather than boys and girls in general, and may further depend on children's birth order, and parents' marital relationship.[17] Consider two examples. Change in gendered attitudes from age 7 to 19 varies across context and personal characteristics: [18] on average, traditionality declines with age, but traditional attitudes increased in firstborn boys with brothers and traditional parents. When husbands have more job-related resources than wives (income, job prestige), women tend to have less power in the marital relationship[19] and this is likely to affect children's socialization, e.g., modeling. Furthermore, parents themselves are changed by the sex of their children. For example, parents' family activities, including household tasks, depend on whether they have daughters or sons; parents with offspring of the other sex report less traditional leisure activity interests by the time their children reach middle childhood.[20]

Context extends beyond the immediate social world of the child. Other aspects of context, such as culture, neighbourhood and social organizations, likely also matter for gender development, and may moderate the effectiveness of parents, peers and schools.

Implications for Development and Policy

It is difficult to judge the implications described by the authors because of the limited evidence

available to guide policy. Interventions do not always work as planned, so it is essential to have empirical tests of interventions before they are widely implemented.

Questions about the nature and direction of attitude-behaviour links mean that it is difficult to know how the interventions proposed in the papers will work. If attitudes do not cause behaviour, then changing attitudes or stereotypes about gender will not have the effect of changing behaviour. For example, classroom interventions that make gender salient increase children's gender stereotypes, but not their own sex-typed interests.[21] It may be enough to change attitudes, but then that should be the stated goal.

It is not always clear what is needed to change behaviour. Several interventions designed to increase the participation of girls and women in science, technology, engineering and mathematics (STEM) fields focus on breaking stereotypes. One of them, Science Cheerleaders (www.sciencecheerleader.com) has "professional cheerleaders pursuing science careers who playfully challenge stereotypes […] and inspire young women to consider (STEM) careers […] by recasting the image of scientists and engineers." But, there is little evidence that this approach is effective.

In fact, interventions that challenge stereotypes might actually have unintended effects because they call attention to gender. As noted by the authors of papers in this section, interventions may work best if they make gender less – not more – salient. But, this would not be clear without careful empirical testing. Thus, we should be cautious about introducing interventions that make sense without carefully testing them.

It is also important to consider that intervention effectiveness may differ across people, as a function of personal characteristics and social experiences, such as interests, developmental status, family structure and other contexts. An intervention that has an average beneficial effect may not harm anyone, but that should be tested. When there are scarce resources and limited time, it is also valuable to identify children most likely to benefit from interventions.

A key question concerns the motivations behind interventions. We agree that all children should have the opportunity to do whatever they want to do, and that policy should focus on combatting stereotypes and prejudice that reduce the options available to children (and adults) and providing equal opportunities and access to resources. But, some children may still make gendered choices. Is the goal to eliminate opportunity disparities or gender differences? Whereas some programs strive to provide equal opportunities for both genders, other effort to increase gender equity focus on making girls and women more like boys and men (e.g., improving girls' math and spatial skills), rather than making boys and men more like girls and women (e.g., improving boys'

emotion recognition skills). This reflects the tendency in many countries to value male-typed characteristics over female-typed characteristics; consider the status and salary of careers dominated by men versus women. It is important to consider how policy decisions regarding gender may reflect the differential prestige accorded to the sexes, and whether policy changes should focus on encouraging gender similarity or according boys (men) and girls (women) equal respect, status and opportunity. Promoting respect, status and opportunity is consistent with human rights approaches.

References

1. Hanish LD, Fabes RA. Peer socialization of gender in young boys and girls. Martin CL, topic ed. In: Tremblay RE, Boivin M, Peters RDeV, eds. *Encyclopedia on Early Childhood Development* [online]. Montreal, Quebec: Centre of Excellence for Early Childhood Development and Strategic Knowledge Cluster on Early Child Development; 2013:1-5. Disponible sur le site: http://www.child-encyclopedia.com/documents/Hanish-FabesANGxp1.pdf. Page consultée le 23 décembre 2013.
2. Leaper C. Parents' socialization of gender in children. Martin CL, topic ed. In: Tremblay RE, Boivin M, Peters RDeV, eds. *Encyclopedia on Early Childhood Development* [online]. Montreal, Quebec: Centre of Excellence for Early Childhood Development and Strategic Knowledge Cluster on Early Child Development; 2013:1-5. Disponible sur le site: http://www.child-encyclopedia.com/documents/LeaperANGxp1.pdf. Page consultée le 23 décembre 2013.
3. Bigler R, Hayes AR, Hamilton V. The role of schools in the early socialization of gender differences. Martin CL, topic ed. In: Tremblay RE, Boivin M, Peters RDeV, eds. *Encyclopedia on Early Childhood Development* [online]. Montreal, Quebec: Centre of Excellence for Early Childhood Development and Strategic Knowledge Cluster on Early Child Development; 2013:1-5. Disponible sur le site: http://www.child-encyclopedia.com/documents/Bigler-Hayes-HamiltonANGxp1.pdf. Page consultée le 23 décembre 2013.
4. Halim ML, Lindner NC. Gender self-socialization in early childhood. Martin CL, topic ed. In: Tremblay RE, Boivin M, Peters RDeV, eds. *Encyclopedia on Early Childhood Development* [online]. Montreal, Quebec: Centre of Excellence for Early Childhood Development and Strategic Knowledge Cluster on Early Child Development; 2013:1-6. Disponible sur le site: http://www.child-encyclopedia.com/documents/Halim-LindnerANGxp1.pdf. Page consultée le 23 décembre 2013.
5. Tavris C, Aronson E. *Mistakes were made (but not by me): Why we justify foolish beliefs, bad decisions, and hurtful acts.* Orlando, FL: Houghton Mifflin Harcourt; 2007.
6. Ruble DN, Martin CL, Berenbaum SA. Gender development. In: Eisenberg N, ed. *Handbook of child psychology. Volume 3. Social, emotional, and personality development. 6th ed.* New York: Wiley; 2006:858-932.
7. Berenbaum SA, Beltz AM. Sexual differentiation of human behavior: Effects of prenatal and pubertal organizational hormones. *Frontiers in Neuroendocrinology.* 2011;32(2):183-200.
8. Hines M. Gender development and the human brain. *Annual Review of Neuroscience.* 2011;34:69-88.
9. Berenbaum SA, Hines M. Early androgens are related to childhood sex-typed toy preferences. *Psychological Science.* 1992;3:203-206.
10. Auyeung B, Baron-Cohen S, Ashwin E, et al. Fetal testosterone predicts sexually differentiated childhood behavior in girls and in boys. *Psychological Science.* 2009;20:144-148.
11. Frisén L, Nordenström A, Falhammar H, et al. Gender role behavior, sexuality, and psychosocial adaptation in women with congenital adrenal hyperplasia due to CYP21A2 deficiency. *Journal of Clinical Endocrinology & Metabolism.* 2009;94:3432-3439.
12. Blakemore JEO, Berenbaum SA, Liben LS. *Gender development.* New York: Psychology Press / Taylor & Francis; 2009.

13. Pasterski VL, Geffner ME, Brain C, Hindmarsh P, Brook C, Hines M. Prenatal hormones and postnatal socialization by parents as determinants of male-typical toy play in girls with congenital adrenal hyperplasia. *Child Development.* 2005;76:264-278.

14. Udry JR. Biological limits of gender construction. *American Sociological Review.* 2000;65:443-457.

15. Berenbaum SA, Blakemore JEO, Beltz AM. A role for biology in gender-related behavior. *Sex Roles.* 2011;64:804-825.

16. Galambos NL, Berenbaum SA, McHale SM. Gender development in adolescence. In: Lerner RM, Steinberg L, eds. *Handbook of adolescent psychology. 3rd ed.* Hoboken, NJ: Wiley; 2009.

17. McHale SM, Crouter AC, Whiteman SD. The family contexts of gender development in childhood and adolescence. *Social Development.* 2003;12:125-148.

18. Crouter AC, Whiteman SD, McHale SM, Osgood DW. Development of gender attitude traditionality across middle childhood and adolescence. *Child Development.* 2007;78:911-926.

19. McHale SM, Crouter AC. You can't always get what you want: Incongruence between sex-role attitudes and family work roles and its implications for marriage. *Journal of Marriage and the Family.* 1992;54:537-547.

20. McHale SM, Crouter AC. How do children exert an impact on family life? In: Crouter AC, Booth A, eds. *Children's influence of family dynamics: The neglected side of family relationships.* Mahwah, NJ: Erlbaum; 2003.

21. Hilliard LJ, Liben LS. Differing levels of gender salience in preschool classrooms: Effects on children's gender attitudes and intergroup bias. *Child Development.* 2010;81:1787-1798.