



The Future of Human Reproduction: Working Paper #9

Dolls, toys and formative attitudes towards children and childbearing

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June 2009

The Future of Human Reproduction

Supported by St. John's College Research Centre, University of Oxford and the Vienna Institute of Demography,
Austrian Academy of Science

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Introduction

Young girls playing with dolls is probably one of the most visibly familiar images of early child interaction with childbearing and nurturing. However, surprisingly little research has been performed on the role which this interaction plays in shaping an individual's attitudes and, ultimately, their reproductive career. Indeed, in a 'low-fertility trap' context, where small families become the normalised and children are surrounded by fewer or no siblings to nurture, this form of 'synthetic' nurturing could play an important psychological role (Lutz, Skirbekk et al. 2006; Chen 2007).

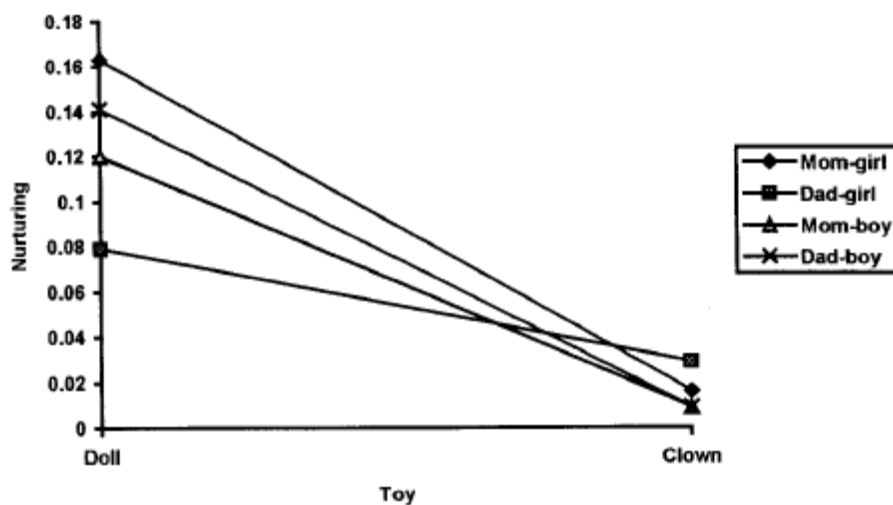
In this paper, we examine the role of toys – and dolls in particular – in shaping childhood and adolescent attitudes towards reproduction, nurturing and childbearing. We will also examine the arguments as to whether particular types of toys assist in the development of attitudes – either materialist or otherwise – which might, potentially, foster an ever greater egocentrism. Finally, we consider the scientific aspects of toy-play, to determine the extent to which such behaviour is socially or biologically determined. Importantly, the themes in this paper will be picked up again in further working papers on homosexuality, gender differentiation, materialism and the media.

According to Caldera and Sciaraffa, 'differences in toy choices allow children to rehearse behaviours that may contribute to later differences between males and females' (Caldera and Sciaraffa 1998). For example, a number of studies have demonstrated play with sex-typed toys contributing to the formation of gender schemas (Bem 1981; Bem 1984) because, in short, 'girls typically prefer toys such as dolls whereas boys typically prefer toys such as vehicles and balls' (Alexander and Hines 1994; Alexander 2006; Heron and Slaughter 2008; Wehberg, Vach et al. 2008; Williams and Pleil 2008). Indeed, Miller has designed a scheme to measure the gendered 'strength' of particular toys in an attempt to allow a more formal analysis of toy use in the future. These range from 'Tea set, Raggedy Ann/Andy, Picturebooks, Teddy Bear and Doll House', through neutral toys such as 'Rocking horse, top, finger paints and chalkboard/chalk' to heavily male toys like 'Electric train, tool kit and microscope' (Miller 1987).

While play with masculine toys has been said to lead to higher mobility, activity and manipulative play (Martin and Halverson 1981; Block 1984; Caldera and Sciaraffa 1998), play with feminine toys has been found to foster nurturance, proximity and role play (Liss 1983). In

particular, the work of Caldera *et al.* has demonstrated that developing nurturance can be linked to particular types of toy-play. In a study of 42 parent-toddler interactions with 2 baby dolls and a soft stuffed clown, quite different play behaviours were elicited from both parents and children. Indeed, as figure 1 demonstrates, not only did the type of toy make an important difference, but there was ‘a significant parent gender \times child gender \times toy interaction in the proportion of nurturing behaviours initiated by parents (Caldera and Sciaraffa 1998).

Figure 1: Proportion of nurturing behaviours initiated by parents with both dolls and clowns in play with their children [reproduced from (Caldera and Sciaraffa 1998)]



Dolls

From the early 20th century, the trend was generally towards dolls which looked and felt more realistic (Chudacoff 2007). Indeed, according to Formanek-Brunell’s 1994 study of the American doll industry between 1830 and 1930, this period was marked by a gendered dichotomy among manufacturers – of females informed by a maternalist ideology and a thorough familiarity with children and males focussing on ‘inventive technology and scientific management’ (Formanek-Brunell 1994; Rosenzweig 1994; Steelman 1994; Oakes 1995; Walsh 1995). Indeed, early female designers believed that boys as well as girls should play with dolls and, as such, produced dolls of both genders (Formanek-Brunell 1994; Rosenzweig 1994). However, as Rosenzweig states, ‘after World War I, professional businesswomen in the field were progressively marginalised or disillusioned, while their male counterparts engaged in the mass production and marketing of dolls as symbols of a resurgent idealised domesticity’ (Rosenzweig 1994).

Betsy Wetsy, perhaps the most famous ‘inventive’ doll, was first produced by US toy firm Ideal in 1954 and urinated after being given water, while the ‘Dy-Dee’, a similar doll which also cried was brought out by Effanbee in 1934 (Augystyn Jr. 1994; Chudacoff 2007). The doll went on to become a staple of American culture, appearing in countless novels and memoirs (duCille 2004; Hickey 2005). Overall, the notion was that these dolls were to be marketed to ‘young girls for the purpose of playing with and trying on domestic roles and mothering’ (Lind and Brzuzy 2008). The settings of these dolls, therefore, were very much geared towards the reinforcing of gender roles – employing tea sets, dolls houses, homemaking equipment (Chudacoff 2007). One author, who must surely not be alone, stated that ‘when I was quite young, a friend and I were playing make-believe childbirth by putting our Betsy Wetsys under our skirts and groaning...My mother was horrified and immediately stopped the game...This was a very innocent act – it wasn’t even as precocious as playing doctors’ (Montano 2000).

Dolls have taken on increasingly realistic traits. As Browne states, ‘Betsy Wetsy drank and wet; Little Miss Echo contained a recording device that repeated what a child said; Kissy hugged and kissed [and] Bye Bye Baby waved goodbye’ (Browne 2001). Perhaps the ultimate in such realistic dolls is *Baby Alive*, now manufactured by Hasbro. What sets *Baby Alive* apart is the doll’s ability to defecate in its own disposable diapers after being fed packets of synthetic food: hence the phrase on the packaging, ‘oh-oh! Baby Alive needs a diaper change. She really dirties it!’ (Daly 1992). The doll was introduced by toy firm Kenner in December 1973 and, according to Daly, regularly sold a million units per year in the 80s in the United States, and ‘three times that many kits of disposable food and diapers’ (Daly 1992). As can be seen from figure 3, its unusually large eyes and forehead emphasise the effect of ‘cuteness’ or *kindchenschema* as discussed in earlier working papers. Since the 1970s, *Baby Alive* has been developed and improved in a number of ways. When the *Little Mommy Real Loving Baby Gotta Go Doll* is placed on a supplied potty, a magnet is triggered and ‘The ‘water’ in the toilet disappears, with the expected ‘potty waste’ appearing in its place...Your child can then flush the toilet. The ‘water’ will reappear, while the toilet makes a very realistic flushing sound!’ (Schulte 2008). *Baby Oh No!* does not soil herself, but does get incredibly messy after contact with a synthetic chocolate cone or water (see figure X below). The original *Baby Alive*, meanwhile, will soil herself without contact with a magnetic potty, but will announce her intentions by stating, for example, ‘Uh, oh, I had an accident’ or ‘I made a stinky.’ The best experience of seeing *Baby Alive*, is,

however, to see it in action at <http://www.youtube.com/watch?v=ieREhZVKd-8>. As Kathleen Harrington, senior brand manager for Hasbro states, 'For us, the peeing and pooping is pretty magical. As adults, we might be a little grossed out. But it's so magical and so funny and so silly for these girls. This little doll is coming to life, so the little girl doesn't believe it's just a doll. It's her baby' (Schulte 2008).

Figure 2: an early *Betsy Wetsy* advertisement

It's fun to mother
BETSY WETSY

America's favorite crying and wetting doll! She drinks, sleeps, cries real tears and wets! Betsy's soft vinyl body can be bathed, powdered, lotioned; her rooted Sarah hair can be combed, shampooed and waved! Every little girl wants Betsy Wetsy, so durably made she will be her favorite doll for years.



BETSY WETSY (Above) with molded hair has layette including: dress, bonnet, slip, shirt, diaper, pins, bottle, nipple, wash cloth, soap and puffs. 11½" \$5.98; 13½" \$7.98; 16" \$9.98.

DELUXE BETSY WETSY (Above) with soft vinyl head and rooted hair. In carrying case with dress, bonnet, shirt, diaper, puffs, bottle, nipple, clothes-pins, soap. 11½" \$8.98; 13½" \$10.98; 16" \$13.95.



DELUXE BETSY WETSY IN STURDY SUITCASE (Right) containing: pretty dress, bonnet, slip, shirt, diaper, rubber panties, booties, bottle, pins, soap, puffs. Size: 11½" \$10.98; 13½" \$12.95; 16" \$15.95.

She's a wonderful doll, she's **IDEAL**

Figure 3: a *Baby Alive* doll



Figure 4: a *Baby Alive* model with potty

Going to the Potty

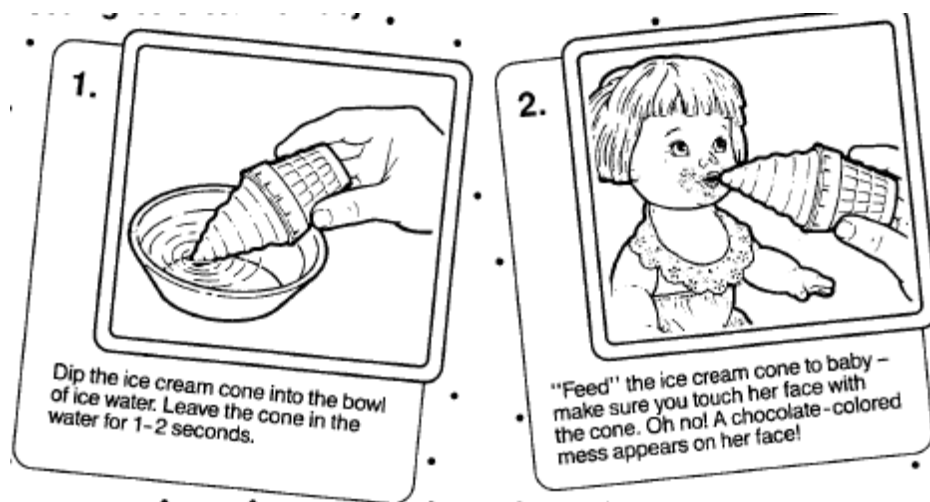


Your TALKING BABY ALIVE® doll comes to you wearing her dress and training pants. When she tells you she has to go

Figure 5: Changing the diaper on *Baby Alive*



Figure 6: *Baby Oh No!*



Baby Alive is currently America's second best-selling doll; however, there appears to be a total paucity of research on the broader consequences and psychology behind desiring and/or owning *Baby Alive* as compared to the numerous studies on the effects of *Barbie* doll ownership (Cunningham 1993; Randolph 1998; Grewal 1999; Pearson and Mullins 1999; Messner 2000; Noack 2000; Yanof 2000; Villanueva 2002), which is said, among other things, to distort children's perceptions of body shape and size (Dittmar, Halliwell et al. 2006). There is surely some significance in the enduring desire of children to play with, and ultimately care for (albeit in a synthetic way) babies. This technology, which is able to reproduce more and more of the less immediately pleasant aspects of caring for a baby, could be significant purely in its own

right - children like the technology, the sense of something 'different'. On the other hand, is there something particular about caring and nurturing for another 'being' inherent in children, in the same way that pet ownership has been described in Working Paper #3? Indeed, as family sizes decrease, could dolls such as *Baby Alive* increasingly form a substitute for children caring for their siblings? Some further research into this phenomenon is surely warranted.

On the other hand, realistic dolls are being increasingly employed to *deter* teenagers from becoming pregnant. The current market leader is a product entitled *Baby Think It Over*, produced by US firm *RealityWorks*. The product is described as follows:

RealCare® Baby is crafted from soft vinyl and features real infant sounds, to simulate a newborn infant from birth to three months old. Baby comes in seven different head styles for both male and female, and features a patented head and neck assembly that requires constant, proper head support just like a real baby.

During a simulation, Baby cries to be cared for as a real infant would. The participant must determine what Baby needs and respond in a timely manner. Baby must be fed, burped, rocked and diapered around the clock.

Unique, wireless IDs are worn by the caregiver and Baby will only recognize the person responsible for its care. Optional "babysitter" IDs are available and used at the discretion of the instructor. This ensures that only the assigned participant(s) responds to RealCare® Baby, and that the results accurately represent their performance.

Baby tracks its care (rocking, diapering, feeding, burping) and safe handling. Detailed data can be downloaded after the simulation, including exact times of missed care events, and specific mishandling—Shaken Baby, head support failure, wrong positioning and rough handling (RealityWorks 2009)

As figure 7 demonstrates, the babies come in a variety of types. The computer simulation software can be set to different levels - from easy to hard - with a printout of the care given available upon completion of the task.

Figure 7: Models of *Baby Think It Over*

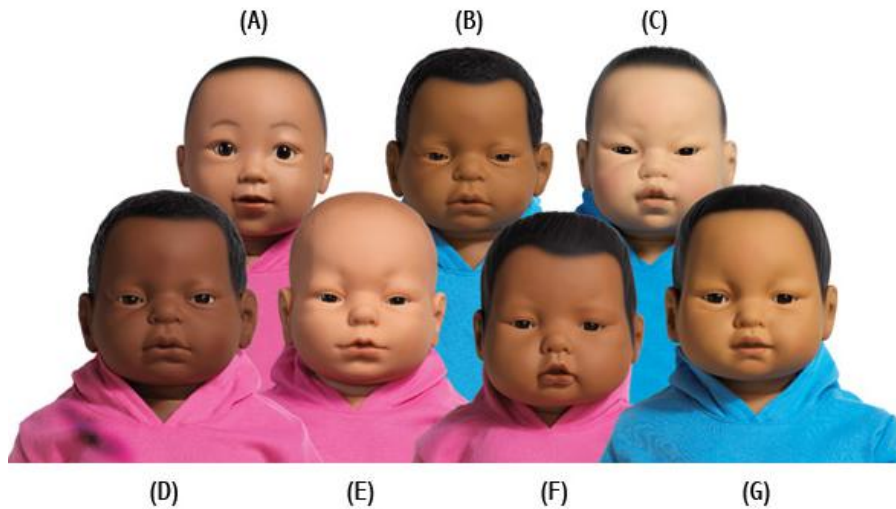


Figure 8: Sample 'report' on care (reproduced from (RealityWorks 2009))

RealCare® Parenting Program
Simulation Report

Realityworks
Live it. Learn it.

Class Parenting 101
Student Barb **ID1** 10112 **ID2** 12C60
Baby Marshall **BABY 12** Caucasian Male
Start 4/22/2006, 10 AM **Stop** 4/27/2006, 10 AM
Schedule Order 3 13 15 4 7
Quiet Times Sunday 10 AM, 2 hours
 Wednesday 12 PM, 4 hours

Total Simulation Time: 5d 00h 00m			Baby cried 32 minutes total		
Proper Care			Mishandle		
Rock	11/11	100%	Shaken Baby	0	0%
Diaper	24/25	96%	Head Support	4	-20%
Burp	11/13	85%	Wrong Position	0	0%
Feed	25/26	96%	Rough Handling	0	0%
Average	71/75	95%	Other	5%	5%
ID1 was used 72 times, ID2 was used 5 times			Total	4	-15%

Performance Overview: 80%

Saturday, April 22
 10:00 AM Start Simulation
 4:30 PM Begin Quiet
 6:09 PM End Quiet
 10:36 PM Mixed Burp
 10:58 PM Head Support

Sunday, April 23
 10:00 AM Begin Quiet
 12:00 PM End Quiet

Monday, April 24
 6:20 AM Mixed Burp
 6:21 AM Head Support
 7:29 AM Begin Quiet

Monday, April 24
 1:32 PM End Quiet
 3:07 PM Mixed Diaper
 3:08 PM Head Support
 3:09 PM Begin Quiet

Tuesday, April 25
 5:29 PM End Quiet
 8:38 PM Mixed Feeding
 8:38 PM Head Support

Wednesday, April 26
 12:00 PM Begin Quiet
 4:00 PM End Quiet

Thursday, April 27
 10:00 AM Stop

Comments:
 Good job, but be more careful with Baby's head support!

Date Programmed: 4/22/2006 8:17 AM

The point of the project can be summarised by a statement from a high school teacher: 'having a baby is kind of a drag for kids: they come to school, they're tired because the babies kept them up all night...These teens are having to be responsible for something. I think it does

a great job of putting some of that responsibility out...It's a hands-on project, and hopefully it makes kids more aware about protection and having safe sex' (Pattee 2005).

The success of the project is difficult to judge. Some studies suggest the dolls allowed for greater communication between parents and teens concerning pregnancy and childrearing (Price, Robinson et al. 2000). However, certain controlled tests have demonstrated a far more limited rate of effectiveness in increasing understanding of parental concerns (Bath, Cunningham et al. 2000)

Furthermore, some teens have expressed reservations over the project, with one 17-year old stating that 'I don't think it helps teens become more responsible because it's nothing like a real baby...A real baby gives you happiness...This is a plastic little doll that cries all the time—that's all it does, it doesn't shut up ever...When I think of having a baby, the Baby Think It Over is not what comes to my head' (Pattee 2005). This, of course, is how the manufacturer would desire it to be – all the negative aspects of childrearing to the fore. The notion of the doll, as highlighted by Krawleski *et al.*, is to challenge the so-called 'person fable of omnipotence' present in the teenage psyche. Indeed their study demonstrated 'that the propensity of people this age for rationalizing their own immunity to the noxious aspects of potentially desirable situations allows those who perceive parenthood to be attractive to overlook the negative aspects of any parenting experience they have' (Krawleski and Stevens-Simon 2000). However, if this is a widespread and successful public intervention, it could develop negative feelings toward childrearing later in life. There is also the peculiar moral question of the rights and wrongs of *encouraging* young girls to interact with dolls and the develop a mothering or nurturing at one age, only to *discourage* them a few years later (perhaps after an intervening period of intense exposure to unrealistically shaped dolls and other consumerist 'needs').

In-between 'toy' and 'real' babies

As we have said before, numerous studies have shown the potential for 'Barbie' dolls to affect children's self-identity and perception of body shape and size. This notion will be examined further in the working paper on the media. However, another type of doll has recently emerged which places emphasis not only on looking good and fashionable, but explicitly on 'consuming' (Wohlwend 2009). Carrington's study of *Diva Starz*, talking dolls aimed at girls aged between 6

and 11 highlights this (Carrington 2003). 'Alexa' and Summer', two of the range of *DivaStarz*, come equipped with over 10,000 'amusing and witty conversational pieces' such as:

I'm in a bad mood. Let's go shopping? Do you like shopping?

Let's go shopping with some friends. My friends are way into fashion. Are your friends into fashion? Which of your friends has the best fashion style? No way! I love buying presents for my friends. Do you like shopping?

I'm so sad. I so need a new school outfit. Wanna go to the mall? Let's invite a friend to go shopping! Who should we invite? Fabulous, let's go to the mall with our friends and buy something we can wear to parties. Wanna go to the mall?

Do you like shopping? What's your favourite store? That's a good one. Let's go to the mall with our friends and buy something we can wear to school

Figure 9: *DivaStarz*



In a similar vein, *Bratz* are dolls which have been turned into video games, an animated TV series and a successful Hollywood film. Similar to *DivaStarz*, *Bratz* are fashion driven and promote consumption.

Figure 9: *Bratz*



Critics have suggested that these kinds of toys – coupled with the kind of media exposure we will discuss in a later working paper – lead simultaneously to the sexualisation of children – particularly girls – at younger and younger ages, or the so-called ‘Britney Spears’ effect and driving them towards an ever greater consumerist viewpoint (Schor 2004; Bennett 2005; Guerrero 2009). As Juliet Schor notes,

Children’s top aspiration now is to be rich, a more appealing prospect to them than being a great athlete, or a celebrity, or being really smart, the goals of earlier eras. Forty-four percent of kids in fourth through eighth grade now report that they day-dream “a lot” about being rich. And nearly two-thirds of parents report that “my child defines his or her self-worth in terms of the things they own and wear” (Schor 2004)

This is, of course, a highly sensitive area and one which no one has, as yet, linked explicitly into attitudes relating to reproduction and nurturing. However, in order to understand the decision making dynamics of materialism in contrast to the deleterious effect of reproduction, this cultural shift could, potentially, play a role.

Figure 10: *Heelarious* – high heeled shoes for girls ages 0-6 months



The bases of gendered toy-play

The scientific basis underpinning gender differentiation among the very young and their interaction with various types of toys is one area where further research is needed. Of course, socialisation has been offered as the most important driver of gender-specific human toy preferences. Bandura and Bussey, for example, suggest that gendered behaviour is ‘socially situated, richly contextualized, and conditionally manifested rather than governed mainly by an intrinsic drive to match stereotypic gender self-conception’ (Bandura and Bussey 2004) while Martin *et al.* focus on individual cognitive development (Martin, Ruble *et al.* 2002). There is, of course, a role for the societal endorsement of toy behaviour (Martin, Ruble *et al.* 2002). Banerjee and Lintern, for example, test the hypothesis that ‘the gender-typing displayed by young children is at least in part an active self-presentational effort to win positive evaluation from peers’. In this study, ‘Sixty-four children aged between 4 and 9 years described themselves in terms of their activity and toy preferences, once when alone and once when in front of a group of same-sex peers...They also completed a task measuring the rigidity of their gender

stereotypes...It was found using both group-based and individual-based analyses that the children with the most rigid stereotypes - young boys - were more likely to present themselves as sex-typed in front of the peer audience than when alone' (Banerjee and Lintern 2000). Another suggestion is that the greater preference for gendered toys in boys reflects a greater rejection of opposite sex behaviour in boys than girls, suggesting that girls might be less rigid in their gender-type beliefs, behaviours and preferences (Bussey and Perry 1982; Ruble 2006; Hassett, Siebert et al. 2008). Parents, of course, play an important role in shaping this behaviour with parents filling children's rooms with gender traditional toys and objects (Eisenberg, Wolchik et al. 1985; Idle, Wood et al. 1993; Case-Smith and Kuhaneck 2008; Kwak, Putnick et al. 2008; Zosuls, Ruble et al. 2009) and often reacting negatively to children engaged in cross-gender activities (Caldera, Huston et al. 1989; Leaper, Leve et al. 1995; Leaper and Gleason 1996).

Many, however, have cautioned against approaching the topic from a purely social constructionist perspective. Indeed, some have railed against the application of biosocial theory to the understanding of gender differentiation among the young (see (Luxen 2007). One important area for future study is the impact of gonadal hormones (Hines 1982; Arnold and Gorski 1984; Collaer and Hines 1995; Hines 2009). As Hines *et al.* state,

We know, for instance, that by 3 years of age girls and boys show clear preferences for different types of toys, with girls tending to choose dolls and tea sets and boys tending to choose vehicles and weapons. Hormone-related differences in toy choices are also seen in children beginning at about this age. However, we know little about how hormones relate to behaviours earlier in life and how hormone-related differences between girls and boys, or between children of the same sex who were exposed to different hormone environments might elicit different behaviours from parents or other caretakers (Hines 2008)

In an extreme case, we know that girls with congenital adrenal hyperplasia (CAH), a syndrome resulting in overproduction of adrenal androgens from early foetal life, are behaviourally masculinised (New 1998; Nordenstrom, Servin et al. 2002; Pasterski, Hindmarsh et al. 2007). A recent Swedish study, for example, found that 'three of the four girls [with CAH] played exclusively with one of the masculine toys, a constructional toy' suggesting that 'prenatal androgen exposure has a direct organizational effect on the human brain to determine certain aspects of sex-typed behaviour' (Nordenstrom, Servin et al. 2002). Differing prenatal testosterone exposure has been cited as a particularly important aspect of determining gendered behaviour (Hines 2006; Auyeung, Baron-Cohen et al. 2009; Collaer, Brook et al.

2009; Mathews, Fane et al. 2009). Furthermore, it has been suggested that these hormonal differences play an important role in shaping an individual's sexual orientation (Hines, Brook et al. 2004; Meyer-Bahlburg, Dolezal et al. 2008) – but this will be dealt with in greater depth in a future Working Paper.

One clue could lie in parallels with the non-human world (Hines 2009). [For an excellent review of current research, see (Williams and Pleil 2008).] Hassett *et al*, for example

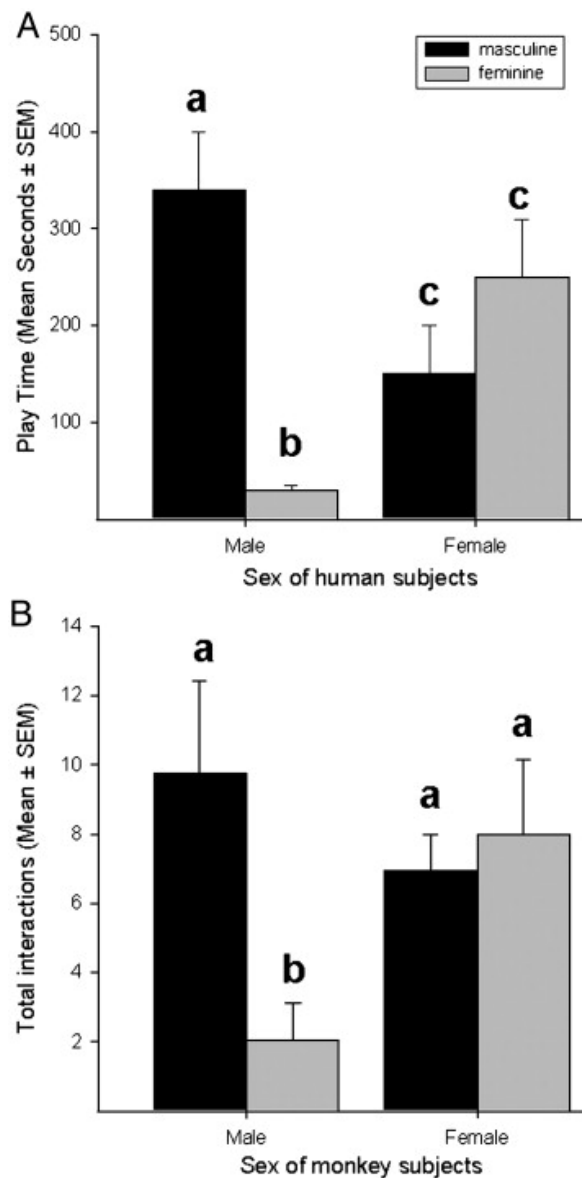
compared the interactions of 34 rhesus monkeys, living within a 135 monkey troop, with human wheeled toys and plush toys. Male monkeys, like boys, showed consistent and strong preferences for wheeled toys, while female monkeys, like girls, showed greater variability in preferences. Thus, the magnitude of preference for wheeled over plush toys differed significantly between males and females. The similarities to human findings demonstrate that such preferences can develop without explicit gendered socialization.

The hypothesis offered, therefore, was that 'toy preferences reflect hormonally influenced behavioural and cognitive biases which are sculpted by social processes into the sex differences seen in monkeys and humans' (Hassett, Siebert et al. 2008).

Figure 11: Vervet monkeys contacting sex-typed toys. Left: female with doll. Right: male with car (Hines 2009)



Figure 12 (A) Sex difference in play with stereotypical masculine and feminine toys in a choice paradigm. Different superscripts within category or within sex indicate significant differences. [Adapted from (Berenbaum and Hines 1992)]. (B) Sex difference in total frequency of interactions with plush and wheeled toys by rhesus monkeys. Different superscripts within category or within sex indicate significant differences. [Reproduced from (Hassett, Siebert et al. 2008)]



Researchers do, however, cite both nature *and* nurture as a cause. In Wallen's study of rhesus monkeys, for example, it was found that 'the expression of consistent juvenile behavioural sex differences results from hormonally induced predisposition to engage in specific patterns of juvenile behaviour whose expression is shaped by the specific social environment experienced by the developing monkeys' (Wallen 1996). This will be further explored in a later working paper.

Conclusion

As in most of the working papers in the series, the over-riding conclusion of this piece is that both biological and social processes play a crucial role in shaping children's interactions with toys which, in turn, has been found to significantly impact upon an individual's gendered scheme and progression. The genetic bases of these interactions will be considered in greater depth in future.

Future possible research questions in this field include:

1. Using neuroscientific technology – does children's brain activity around dolls mirror that of adults around children?
2. Why *do* parents buy dolls in 2009?
3. Why *do* children like dolls which soil themselves?
4. What kinds of toys do the childless/childfree buy for children they know?
5. What toy buying strategies do homosexuals have? (This will be covered in a future working paper)
6. Are girls aged 6-11 increasingly looking *forward* to sexualised/consuming adolescence rather than 'living for the present'? If so, how does this affect their development?

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