

Original Article

“Rough and Tumble” Play: Lessons in Life

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Abstract: This paper focuses upon the developmental role of Rough and Tumble (R&T) play with particular attention to the narratives that children use to underpin such activities, and to gender differences within these. The empirical research focused upon the R&T play of children in the early years department of a suburban primary school in Northern England. The children’s playtime activities were ethnographically observed over a period of eighteen calendar months, encompassing five school terms. The effects of evolution, biology and culture are recognized in the approach taken to the analysis of data. Findings indicated that the narratives underpinning R&T play were socially complex and highly gendered, and that mixed gender R&T play in particular could be theorized to mirror and simplify aspects of complex, gendered adult interaction.

Keywords: rough and tumble play, social development, evolution, culture, gender.

Introduction

“Rough and Tumble” (R&T) play has been defined as a physically vigorous set of behaviors Rough and Tumble, such as chase, jump and play fight, accompanied by positive affect from the players towards one another (Pellegrini, 1995). The play type was first academically named as such by the anthropologist Karl Groos in his books “Play of Animals” (1898) and “Play of Man” (1901). Much research carried out to study the social R&T play of young human and non-human primates indicates that the activity creates valuable practice scenarios for complex social interactions that creatures need to undertake in order to become competent, socially mature adults (Pellegrini and Smith, 1998). Over the past 25 years, the development of post-industrial Western society has resulted in an increasing reduction of the time and space allocated for children to engage in such play (Pellegrini and Blatchford, 2002; Stephenson, 2003), while over the same period, concerns about poor socialization of young people and society as a whole have been increasingly raised; for example, a substantial longitudinal study carried out by Collishaw, Maughan, Goodman and Pickles (2004) produced clear evidence of a rise in conduct and emotional problems among British adolescents over the period between 1986 and 1999. While it is likely that the issues underlying such a finding are multi-factorial, the possible range of reasons explored by Collishaw et al. did not include decreasing opportunities for children to engage in social free play over the period of the research.

Modern Western education policies tend to be narrowly focused upon the development of cognitive skills, with little attention paid to other facets of development, particularly the social. Sylva, Roy and Painter (1980) divided play into challenging and ordinary pursuits, with R&T very firmly in the ordinary/unchallenging category, purportedly having a low developmental yield. Such views were taken forward into the culture of western education and consequently the planning of many Western early-years curricula during the 1980s and 1990s. Bishop and Curtis (2001, p. 34) quoted the Superintendent of schools in Atlanta: “we are intent on improving performance. You don’t do that by having kids hanging on monkey bars.” However, some researchers, typically those from the bio-evolutionary paradigm, have disagreed with such negative views of R&T play, reflecting upon the developmental need for children to experience independently initiated and directed collaboration with peers in order to develop the necessary skills to become socially competent adults. Sluckin (1981) suggested that the playground is a key venue for highly developmental play, during in which children initiate original activities, collectively creating and negotiating rule systems. Pellegrini and Blatchford (2002, p. 62) reflected that the playground should be considered “an extended classroom.” The lessons that the children are learning in this classroom of the playground relate to the social and interaction skills essential for primate adult life. Such practice activity can also be discerned in the juvenile play activities of other primates, and to some extent, other mammalian species. This article outlines evidence from bio-evolutionary theory and developmental research that indicates there is a pressing societal need to provide opportunities for children to carry out collaborative free play activities within safe environments, and that, as evolved primates, such opportunities are as crucial to their healthy development and eventual adult competence as instruction in literacy and numeracy.

R&T Play and Bio-Evolutionary Perspectives

Support for the greater prevalence of R&T play in males across primate species was found by Braggio, Nadler, Lance and Miseyko (1978) in the data gathered for their observational study comparing the behavior of children, juvenile chimpanzees and juvenile orangutans. They found that in all three species, males undertook a higher frequency of R&T than female conspecifics. The reason the researchers suggested for this difference is sexually selected and hormonal; the activity of testosterone in male physiology. There is a surge of testosterone in mammalian male bodies in early infancy (the priming or organizing effect), then again at puberty (the activating effect). If the priming effect is absent in males, there seem to be corresponding behavior changes; in particular, reduced R&T has been observed in young rats and monkeys. Introduction of testosterone to young females correspondingly creates more R&T and mounting play. The overall conclusion drawn is that ‘male neonates have a source of testosterone which exerts an organizing effect’ upon behavior (Watson and Stirling, 1992, p. 107).

The importance of testosterone priming in human gender development was demonstrated by Berenbaum and Snyder (1995) and Hines, Golombok, Rust, Johnston and Golding (2002). Congenital Adrenal Hyperplasia (CAH) is a condition in children that results from accidental pre-natal exposure to male androgens. Berenbaum and Snyder (1995) found that girls with the condition showed a significantly greater preference for boys’ toys and activities, while boys with the condition did not differ significantly from a non-CAH control group in any way. Hines et al’s (2002) study calculated the amount of testosterone present in human expectant mothers’ blood,

and subsequently evaluated the behavior of the resulting child at age three-and-a-half. These researchers found that higher levels of maternal testosterone during pregnancy resulted in statistically significant higher rates of physically active play undertaken by female offspring. There was no correlation between levels of maternal testosterone and male offspring behavior. It was therefore suggested that the mammalian fetus is very susceptible to the presence of testosterone, and even slightly higher amounts than is normal in the female fetal environment will be used to fuel a mild priming effect. This has a direct effect upon free play activities in early childhood, resulting in more male-type behavior in the child.

A corresponding finding was made in animal research, in that female rats carried in the same horn of the uterus as male rats showed more male-type behavior (increased mounting): “the mere proximity of a testosterone-secreting male fetus in the uterus is sufficient to have an organizing effect on the behavior of females” (Hall and Halliday, 1992, p. 116). Meaney and Stewart (1985, p. 24) concluded, “play fighting represents one of the few behaviors that is organized by early hormone exposure, but the expression of which is independent of later activational effects of hormones.” These researchers also suggested that young male primates rely heavily on R&T to underpin network building within their peer group, while young females approach their social networking through grooming behavior and close association with adult females, preparing the creature for the sexually selected roles that adult primates fulfill in natural societies. In the case of human beings, these roles would comprise hunting, gathering and child-raising, in which gendered patterns of interaction would exist where competition and cooperation would be structured in subtly different ways (Bjorklund and Pellegrini, 2002).

So does such compelling evidence indicate that researchers should take a strictly biological approach to the study of human R&T? Pellegrini (2005) proposed that if specific behaviors occur in related species then this is an indication of shared selection processes. However, in the highly plastic human species in particular, it is suggested that during the long developmental period (Bjorklund and Pellegrini, 2002) the environment can have a significant effect on the internal calibrations of a diverse set of skills, including those relating to perception, stress coping, knowledge/skill acquisition, relationship maintenance, reaction control and the symbols used to represent the physical and social environment (Bronfenbrenner and Ceci, 1994). The gradual interaction of genes and environment was also emphasized by Ridley (2003), describing how children enter the world with a particular genetic template that needs to interact with the environment over the developmental period to produce the eventual precise settings within the organism. Oyama (2000, p. 5) averred that development occurs by interactive gene-environment construction rather than by reproduction of a fixed program, proposing instead that individual human development proceeds by, “reliable genotype-phenotype correlations and these, in turn require not genetic programs for development, but a reliable succession of organism-environment complexes of developmental systems that repeatedly reconstitute themselves.” Such a view of channeled biological organism development within a nurturing environment allows us to appreciate the role of nature in human development without turning it into a deterministic programming entity, reflecting the process that Ridley (2003) described as “nature via nurture.”

The Role of Evolution in Narrative and Culture

The integral role that the evolved ability for abstract symbolic communication plays in human special and individual development further adds to human developmental plasticity,

creating a unique role for culture within the species where abstract ideas can be shared (Tomasello, 1999), and with the advent of literacy, built upon by subsequent generations. Evolution has thus provided the human primate with language; but how might the abstract symbols used in such communication be channeled through our evolved biology? The concept of narrative deals with how human beings construct cohesive linguistic accounts rooted in shared cultural understandings; might human narrative constructs be mediated by evolutionary factors? Bruner (1990) referred to this as the “biology of meaning,” proposing that while such a concept might initially appear to be an oxymoron, it is a legitimate and highly salient research category. Human beings are creatures who are evolved to critically rely upon sharing symbolic meanings to live in their world, and such symbolic meanings, “depend upon the human capacity to internalize language and use its system of signs...such a social meaning readiness is a product of our evolutionary past” (Bruner, 1990, p. 69). Human beings may understand many, sometimes overtly similar aspects of their world very differently, depending on the story or “fabula” that they attach to them, highlighting the ways that human beings create, “products of the mind, build[ing] them into a corpus of a culture” (Bruner, 1986, p. 45). Lyle (2000, p. 55) proposed that human beings inhabit a, “largely story shaped world...[thus operating as a] storying animal,” making sense of physical and social environments via stories and narratives. An emergent question is therefore: might the genders construct rather different stories, originating from a sexually selected, evolved neuronal template, and consequently, might the earliest expression of such narratives be represented in the first free play activities?

In the pursuit of such extension of knowledge, perhaps Gilligan’s (1993) concept of gendered “voice” can be proposed to be a viable window to the human, gendered template in interaction with the environment, an external manifestation of how the, “genes build the organism and its instincts through a flexible process of development” (Ridley, 2003, p. 129). Studies of playground activity typically find that boys are more involved with physically active play that revolves around issues of dominance and status, while girls prefer more sedentary play exploring more symmetrical, co-operative relationships (Maccoby, 1998; Pellegrini, 2005); in order to initially investigate the correspondence between linguistic and behavioral gender differentiation, there needs to be some exploration of whether there are correspondences in the different types of play undertaken by girls and boys and the ‘voices’ that they use to narrate and describe their play activities. Kyratzis (2000) summarized the current early years gendered language research evidence as follows: girls build a sense of community in their language. Their conversation indicates that they are concerned with being nice, and creating intimacy and solidarity within their friendship groups, wishing to be seen by their friends as moral and loveable. People who are perceived to be mean are excluded from the group. Boys are concerned with being adventurous, risk taking and flouting authority outside the friendship group. They do not seek to appear nice, but they do have underlying concerns about the cohesion/solidarity of the group. People who are weak are seen as not worthy of male group membership.

It may initially seem from such a description that girls within female friendship groups do not compete; this was the position taken by Sheldon (1990), who proposed that boys’ groups are adversarial and girls’ groups affiliative. However, Kyratzis (2001, p.4) firmly disagreed with this position, proposing: “our views on conflict are andocentric and fail to acknowledge girls’ assertion.” In an earlier paper, she emphasized these subtle differences between the gender “voices,” proposing that both genders vie for position in the peer group, boys seeking to be the most dominant, and girls the nicest. Girls tell stories to indicate and consolidate alliances, while

boys' stories are designed to emphasize to one another how naughty (authority flouting/dominant) they are: "narrative is a political activity, serving to establish political alignments by talk" (Kyratzis, 2000, p. 278). Crick (1996) argued that the reason that some researchers propose that girls are not aggressive is because they are focusing on the wrong type of aggression in their research methodologies. While girls do not typically engage in direct physical or verbal aggression, they do employ relational aggression, undermining other children's relationships within the peer group. Roy and Benenson (2002) linked this gender difference to a sexual selection explanation: adult males can achieve their maximum chance to produce offspring by directly competing with other males for status and resources, which enhances their attractiveness to females as superior providers. However, the adult female can produce less offspring and must invest far more of her physical resources in each child than the male parent. In the natural environment, primate females typically care for their children within female kin groups; as such, the pathway to successful reproduction for the female is through building and maintaining strong relationships with the other females in her kin group. Consequently, covertly undermining other females within the group whilst simultaneously maintaining a pleasant façade would appear to be a highly adaptive strategy for females, allowing them to undermine specific competitors whilst maintaining good relationships with the majority of the group. Charlesworth and Dzur (1987) found evidence of such co-operation mixed with manipulation amongst 4-5 year old female, but not male groups. Their study of single-gender interaction found that girl groups tended to form under the control of a single, dominant female who used relational aggression to retain her authority, while male interaction tended to involve dominance behaviors from the majority of group members. While some boys would be more successful than others in their dominance attempts, these researchers noted that all-male groups did not typically fall under the control of a single boy to such a great extent.

The empirical findings of Kyratzis (2000) would also seem to support this model of gendered interaction. She described men and boys using a competitive style in their conversations, depicting a world in which individuals are engaged in contest, while women and girls are more likely to use the conversational style of double voice discourse, a highly assertive conflict speaking style, which nevertheless uses mitigating language content in an apparent attempt to quell discordance amongst the social group (Kyratzis, 2001). Girls' talk thus has a co-operative surface structure but provides a framework where they can compete for emotional dominance within their social group, while boys talk has a competitive surface structure but provides a framework for companionship and group solidarity. It can therefore be proposed that co-operation can become a very effective form of competition among female groups (Charlesworth and Dzur, 1987), and that within each gender cohort, "narrative manages power, conflict and social ranking within friendship groups" (Kyratzis, 2000, p. 295). Hence there is evidence to suggest that the way that narratives are typically used by each gender can be theorized to be to some extent dependent upon the evolved, gendered bio-psychological template of the individuals concerned.

An empirical example of such gendered interaction can be found in a study carried out by Marsh (2000). She invited children within a nursery setting to undertake active, fantasy play within a "Batcave" role play area, emphasizing that both boys and girls could play and be "Batman" or "Batwomen." It was clear throughout the research period that there were distinct differences between the gendered superhero discourses. "Batwomen were most likely to rescue victims, often those who were clearly vulnerable such as children, maintaining good relationships with their fellow Batwomen, the Batman chased and captured villains" (Marsh,

2000, p. 218). The evolved, gendered template therefore also appears to be reflected in the voices described in this study, girls creating imaginary narratives where good relationships are maintained, compared to the male-generated scenarios in which boys explored status and dominance.

A “warrior discourse” among boys was additionally identified by Jordan (1995, p. 76). She reflected, “we have, as far as I know, little in the way of explanation of how or why these narratives gain such a grip on little boys, but the evidence that they do and have done for generations is inescapable.” It could be suggested that the theoretical missing link in this debate may be the evolved gender template postulated above. In conclusion, there is a body of empirical evidence to suggest that the genders are influenced by their underlying biopsychology to build gendered play narratives.

Consequently, it can be proposed that there is thus a distinct emergent dichotomy with regard to the study of human R&T, indicating a clear link and a distinct difference between the R&T play of children and juvenile non-human animals:

The basic occurrence of R&T play in human children can be shown to have clear evolutionary roots in the non-verbal play of earlier species. This has been demonstrated to be mediated by evolved, sexually selected differences, underpinned by the complex role of testosterone in male mammal physiology.

Such play in human beings is likely to show greater variability and complexity than that observed in animals due to human developmental plasticity and the human ability to incorporate complex symbolic products of culture, narrative and imagination into play actions. Such narratives can be theorized to differ between males and females, as a reflection of different, sexually selected bio-psychologies.

“Deep” Free Play: The Basis of Primate Social Learning

When examples of primate collaborative free play are considered, it can be seen that they form ideal practice scenarios for the young creatures concerned to begin to explore issues that arise within the complex social lives of primate adults (Meaney and Stewart, 1985). This type of play naturally occurs in many mammalian animal species, most particularly those with adult societies that center around complex social networks. For example, Fagan (1976) described play fighting among rhesus macaques where the animals play-bite and feign injury; Bertrand (1976, p. 320) described monkeys playing “tag” where, “one monkey approaches another with play leaps or ... play face, hits it and runs away in order to be chased” and Biben (1998) described the play of juvenile squirrel monkeys during which running, jumping and swinging from branches involves much play fighting, the results of which impact upon the dominance hierarchies within the group.

Human beings have the most complex social networks found among naturally evolved creatures, and our social free play has an important extra dimension, that of language. O’Donnell and Sharpe (2004, p. 90) proposed that boys’ perceived peer groups create R&T play situations in which they explore “a sense of nationalism and territory.” This finding neatly illustrates both the singularly human reliance upon linguistic communication, in which the construction and communication of highly abstract ideas emerge, such as the concept of “nationalism,” and the human similarity with other mammalian species who also use physically expressed play to explore dominance hierarchies and learn to deal with complex sets of vertical and horizontal

social relationships. Human beings alone use rich imaginative models rooted in language to form abstract concepts of their environment and their place within it (Carroll, 2004), which, during the developmental period, are combined with physical play interactions that show great similarity to the highly physical play of non-human animals.

In the past, Western children had many everyday opportunities for such “deep” or “serious” play (Bruner, 1976, p. 57), exploring complex social primate relationships in out-of-school independently directed collaborative activity, involving larger kin groups interacting in public areas principally used by pedestrians rather than motor vehicles. However, during the last quarter of the twentieth century, western children have increasingly inhabited vehicle-clogged areas, within singleton or two-child nuclear families, where they are driven to school and not allowed to play unsupervised in outdoor environments due to parent perception of traffic and “stranger” danger (Stephenson, 2003). Much early twenty first century out-of-school activity involves armchair-bound, solitary playing of computer games, some of which re-create physical activities such as ball games and skate-boarding, complete with digital companions whose reactions have been artificially programmed by adults. More physically active social pursuits are increasingly likely to involve being driven to various supervised venues for adult-directed activities. Corsaro (1997, p. 38) described this process as, “the institutionalization of more and more children’s leisure activities.”

The only regular chance that many contemporary Western children therefore receive to engage in interactive free play is within the environment of the school playground; however, in England, free play time for state school pupils has been continually reduced over the past fifteen years by rearranging the school day around a shorter lunch period and removing the afternoon break (Pellegrini and Blatchford, 2002). When the current debates over the highly didactic English National Curriculum (and other similar western school curriculums) are also considered, it can be proposed that many western children are placed within highly adult-directed environments with little time or space for ‘deep’ interactive free play.

R&T Social Free Play: The Research

The majority of previous research focusing upon R&T play has been carried out to investigate the physical aspects of boys’ R&T play (e.g., Coie, Dodge, and Coppotelli, 1982; Dodge, Coie, Pettit, and Price 1990; Pellegrini, 1993a; Pellegrini, 1993b; Pettit, Bakshi, Dodek and Coie, 1990). However, the research undertaken by the author focused equally upon both the play of both genders, with the purpose of investigating gendered narratives in R&T and chasing behavior. The participant establishment was a medium size primary school located within the suburbs of a large city in Northern England. It was selected for its relaxed attitude to playground-based R&T play, as it was the researchers’ opinion that a school with a more structured approach to playtime (recess) might offer little opportunity to observe children in authentic free play. The participant school had an integral nursery class, which children attended from the September or January following their third birthday, moving up into the Reception class of the main school in the September following their fourth birthday, which is the conventional English practice.

I first met the children who were going to become my research participants in April 2002, towards the end of their nursery year. The principal participants of the research were nine girls and nine boys, born within the six months between September 1997 and April 1998. There was some additional emergent participation from children with whom this focal sample engaged in

play within their school playground, and from adults engaged in the daily activities of the child sample.

The research was undertaken in an ethnographic, broadly participant observational fashion. I visited the children in nursery, arranged the necessary ethical permissions and carried out preliminary observations during their final nursery term between April and July 2002, during which time they got used to my presence and the experience of being observed by an adult speaking quietly into a small dictaphone. The set of observations used as data for this piece of research were subsequently carried out between September 2002 and November 2003. The children were placed in the Reception class of the main school between September 2002 and July 2003, moving up to Year One (first grade) in September 2003.

I used the approach of modeling my interaction role with the children as much as possible upon a volunteer parent-helper in school, attempting the “observer as participant” research methodology (Banister, Burman, Parker, Taylor, and Tindall, 1994, p. 39). I responded to children’s requests for help with buttons and shoelaces, and overtures to ‘show’ objects, while avoiding involvement in any of the directive or play-theme generating adult roles within the playground and the classroom. My gender, age and previous life experience were probably helpful in this respect; in age and appearance I was a fairly typical example of a mother of children within this age group, and added to my professional role as a part-time teacher in a different establishment, I also had previous experience as a volunteer parent-helper at my own children’s primary school. After a very short period of initial interest from the children (2-3 weeks) I was treated by the sample as part of their usual classroom adult cohort, being asked for help with various everyday practical tasks, occasionally shown objects of interest and otherwise fairly generally ignored.

I never approached the children on disciplinary matters, and where children initially asked me to referee arguments or deal with disciplinary issues I referred the complainant(s) to other relevant adults. After a few weeks I found that the sample and their classmates did not tend to bring these matters to my attention, or (as far as I was aware) avoid or hide minor behavior violations when I was present. I felt that I had taken a more naturalistic approach than that used by Blurton Jones (1967) who carried out observations of 3-4 year olds in a nursery setting during 1963-4, reporting that his technique was to be as unresponsive to his child participants as possible. I did not find, as reported by Smith and Connolly (1972) that the frequency of the children’s approaches increased when I carried out basic routine interaction with them; however that might be due to my age and gender, as in the studies that Smith and Connolly referred to the researchers were all male, while, in similarity to the environment I was researching, the school staff were all female. Smith and Connolly reflected on the possibility that female observers might elicit less curiosity from the children, and my experience seemed to bear this out, possibly aided by the fact that several of the adults with whom the children regularly interacted in their nursery and reception class environments were volunteer parent (or more accurately, mother) helpers who frequently worked with small groups or individual children on craft or reading activities.

The principal technique used for the observations was that of “target child” (Sylva Roy and Painter, 1994, p. 9). The final total of target child observations undertaken was seventeen male and sixteen female target child observations, two observations of fifteen of the focal group, and one observation each of the remaining three. Each child who was the subject of two observations was observed once during a playtime (recess) period (20 minutes) and once during a lunchtime period (approximately 40 minutes, depending on how quickly the child finished his/

her lunch and emerged into the playground). I also carried out 5 “target area” observations (Sylva et al., 1994, p. 9), focusing on the regular soccer play that took place on the grassed areas during the summer term, mainly involving the Reception and Year One (equivalent to first grade) boys. My final six observations were carried out as “theoretical sampling” (Strauss, 1987, p. 39) over the autumn term September 03 – November 03, directing the investigation flexibly towards specific R&T play that occurred among the sample, rather than focusing whole observation periods towards the interactions of individual children or interactions within specific areas of the playground.

My usual procedure was to walk around the playground dictating my notes quietly into a dictaphone, standing approximately 10 yards away from the relevant area or the relevant child and his/her playmates. If a child reacted by stopping his/her activities and looking directly at me, I would walk away for a few moments and look elsewhere, returning when the child(ren) were reabsorbed in play. This very seldom happened after the pilot period. When children became very absorbed in play I was usually able to move close enough to hear some of what they were saying; I also made a practice of chatting to them about what they had been playing during that play period as they walked towards their class lines after the bell had gone. I dictated my field notes in an ethnographic style, describing all the target child’s play activities, and associated language during the period of the observation, noting any interruptions, then fully transcribed the tapes. Where I carried out target area observations, I focused on the interactions of the children within the focal sample who were engaged in play within the area. A typical interruption during my observations was caused by the fact that children were allowed to go indoors to use the toilets during lunchtime breaks. I found that this sometimes caused an interruption of individual children’s outdoor play for up to 10 minutes, particularly with respect to the girls who tended to chatter in the hand washing area directly outside the toilet cubicles. Pellegrini (2005) also noted that girls were more likely than boys to find strategies to avoid being outdoors during stipulated outdoor play periods.

Each observation transcript was summarized onto an observational data sheet. I then organized the summarized data into gender-based groupings with sub-sets for girls’ play, boys’ play and mixed gender play. Using these references, I returned to the full set of field notes and collated all the information relating to the children’s “scripting” of their R&T play under the headings of girls, boys and mixed gender play. I found that several such scripts could be divided into over-arching themes (for example, boys chasing/girls fleeing) with more detailed stories being attached to specific episodes of play, which varied from play session to play session. These had a certain pragmatic quality in that the specific story tended to be tailored to the available play environment at the time. For example, in hot, dry weather, part of the process was likely to involve children lying on the grass for short periods of time to signify that they were “out” of a game, while in wet weather the process was changed so being “out” was signified in a different way, for example, standing against a wall. This was predicted by the findings of Pellegrini, Huberty, and Jones (1995) who found that temperature creates a clear effect upon children’s play activities. In order to define an over-arching theme underlying a particular story I deemed this a “narrative,” while the specific story was called a “fabula,” the latter term being taken from Bruner (1986, p. 45). Most of the R&T play observed appeared to have some aspect of narrative that engaged the children and directed their play, in the sense that the moment-to-moment activity involved had a specific meaning for the child or children concerned.

Analysis: Single Gender Play

The rarity of girls only R&T play is the first aspect to remark upon; only four observations from the set of thirty-three target child observations contained girls only R&T play. One of these generated (arguably) the most complex and original fabula observed scripting an episode of R&T play, the story of a witch and a magic rabbit. Another girls-only R&T game was quite lively and involved a large amount of physical contact. It involved spinning quickly around a signpost and then lying on the grass, which at one point, involved a gentle pile-on as the girls laid on top of one another, giggling and hugging. The underlying fabula for this play episode appeared to be “putting baby to bed,” in that baby gets up, goes and plays (spins around the post) and then gets tired and fractious so has to go to bed again.

Fifteen episodes of boys only play were observed during the target child observations; ten of these involved highly active R&T. In single gender R&T the boys tended to rely on current media for fabulas. *Beyblades*, a Japanese fantasy cartoon about spinning warriors was very popular at the time of the observations, and several boys’ spinning activities were observed where they pretended to be the *Beyblades*, sometimes taking on the names of the characters. The game involved spinning while karate chopping at ones’ opponents, the aim being to knock the other player out of a “ring.” When a player was knocked “out,” he generally collected himself and went straight back into play; there did not seem to be any concept of being “out” for any length of time. It was this higher level of energy in boys’ only play that separated the genders most distinctly. A sustained all-boys’ “Robot Wars” game was also observed, based on a factual television program featuring fighting robots. On the face of it, this was chasing and catching play, as was the “witch and magic rabbit” all-girls game. However the pace, roughness and particularly the nature of the contact between the players indicated subtly different gender orientations to chasing activity. Play punching/karate chopping was very evident in the Robot Wars game; a specific chopping motion was later described to me by one of the players as the action of “Mr. Psycho’s hammer.” This type of movement was not observed in the witch and magic rabbit game, which principally involved the child playing the rescuer hugging the child playing the rabbit to protect it from the child playing the witch’s malevolent touch, which, the players agreed, would turn the rabbit into wood. There was also a clear tendency to hug and cuddle in the brief and gentle girls’ pile on, the underlying fabula for this being rather caring/maternal: “putting baby to sleep.” The more common boys’ pile-ons observed, for example connected to a ‘cheetahs and leopards’ fabula, were conversely related to brawling and play strength competition. There was more direct physical confrontation in most of the boys’ games, and less coherent vocalization than was observed in girls’ play.

At times a clear hierarchy seemed to be in operation within the boys’ play that did not appear so obviously within girls’ or mixed gender groups, which was indicated by evidence of boys ‘passing on’ feelings of subordination to other, often physically smaller boys, usually in more overbearing play fighting behavior with particular individuals. Competing male claims of “toughness” were also routinely made; for example, one boy declared during soccer play: “I’m one boy but I can tackle a thousand men.” Another, physically smaller boy replied rather uncertainly, “I can tackle lots of men.” The name of the very popular and glamorous (clearly über-male) England soccer captain was additionally frequently raised by the boys to proudly boast of a successful outcome in the soccer games; for example a typical comment from a boy scoring a goal to the other players was “look – like Beckham!” The vocalization was also sometimes accompanied by a well-observed imitation of Beckham’s characteristic “victory

wiggle.” O’Donnell and Sharpe’s (2004) sense of “nationalism” arose during a discussion of likely soccer team names. “England” was swiftly appropriated by the oldest player for his own team, and his suggestion of “France” for his opponents was overwhelmingly rejected, the more anglocentric “Australia” being later accepted as a workable second best. I also noted that when boys took on roles in fantasy play based on current television programs that the largest and toughest characters were most popular; for example two boys chose the role of “Mr. Psycho” (the newest, toughest house robot) in the Robot Wars chasing game. By contrast, the girls’ main concern seemed to be to appear caring and good. In the witch and magic rabbit fabula, the youngest player was allocated to the most powerful but most villainous role (that of the witch) by the two other players who were both several months older and recognized best friends. These findings add support to Kyratzis’ (2000) proposal that individuals within boys’ peer groups compete to be the toughest, while girls vie with each other to be the nicest.

Such analyses might make it appear that the boys observed were uncaring, but this was emphatically not the case. Where a boy took an injury or a heavy fall and did not make a fuss, or dealt with a play fighting incident that injured another child in a responsible way slightly older boys had a very subtle, but obvious way of showing approval and solidarity; a light touch in passing to the boy who had shown resilience in a difficult situation. Boys also showed care and concern for children who had been hurt, or were unhappy, sometimes evoking a heroic, “savior” narrative structure in fabula creation. One bitterly cold winter’s day, the children were briefly in the playground during a light fall of snow, during which I observed the development of a lively all-boy chasing/R&T game. When I asked the boys about this afterwards, they told me that they had been engaged in saving one of the group from freezing because, “if you freeze you never get out.”

In summary, the findings relating to single gender play supported previous human and non-human animal observational findings in this area, indicating a greater prevalence of R&T among all-boy play groups in terms of amount, pace and intensity, and a gender difference in R&T based fantasy narratives that reflect the findings of Kyratzis (2000, 2001) and Marsh (2000). Such findings are compatible with the theory of an evolved, gendered bio-psychological “template.” Gendered bio-psychology can therefore be theorized to be both utilized and further developed in commensurate physical play and associated narrative during early childhood: “males and females have evolved different strategies for maximizing their inclusive fitness... and these strategies develop in interaction with a child’s social and physical environment” (Bjorklund and Pellegrini, 2000, pp. 1690-1694).

Analysis: Mixed Gender Play

Some of the “deepest” R&T play invoking detailed planning and discussion, usually undertaken by single gender groups, seemed to occur during the mixed gender chasing that the children described as “kiss catch,” and it was in this category of play that the most original observational findings were made. A casual observer may have presumed in all cases that the children were just chasing one another around, but when the narratives used became the focus of the investigation, it became clear that complex, gendered hierarchies were being created and explored within these play activities. Fourteen mixed gender R&T play episodes were observed during the target child observations. Eleven were chasing games, eight of which were initiated by girls and three by boys. The standard process began with a small group of girls seeking out one or two boys to offer a “chase us” invitation; this was typically signaled by a non-linguistic

female to male “touch and run” action. The core narrative underlying mixed gender chasing seemed to be quite predictable; boys pretended to be some kind of powerful, frightening creature and girls ran away from them. There was, however, quite wide variation in the specific fabula used, which seemed to be influenced by the weather-mediated play environment.

In the winter months, the child chaser would often pretend to be some kind of monster. There was a particular stance for this, an expression that can best be described as a grimace, teeth showing, hands up in a clawed position and a slow lumbering walk in the style of an actor playing Frankenstein’s monster. I only observed a girl acting as the monster once during my eighteen months of playground observation, in an all-girl play cohort for a short time before the group went to offer a “touch and run” invitation to a boy. He immediately took over the role of the monster and chased them. I subsequently observed games with a very similar underlying narrative, scripted by several different fabulas: “capturers and captives,” where the children collaborated in a game in which boys pretended to tie girls to a wall with imaginary ropes, where they had to stay until released by another girl, a “dodge and catch” game played on a wet tarmac playground in which girls ran past a line of boys while the boys tried to catch them as they ran, and a “Poison Touch” tag game, played on a hot summer day where girls touched by the boy chaser laid down on the grass and ‘played dead’ until another girl’s touch “revived” them.

While the children invariably described this type of mixed gender interaction as “kiss-catch,” I never saw one kiss occur during any observation. Such games tended to be managed by the female players, initiating the game with a “touch and run” approach, and maintaining it by continued direction of the male players (whose attention often wandered), usually by issuing instructions relating to the specific girl that each one should be chasing. While the male players typically generated very little language during such play, and wandered off to engage in male-only physical activity during lulls in the mixed gender chasing, female to female conversation during such breaks tended to revolve around who had been “kissed” (which seemed to equate to being touched or grabbed) by whom, and how disgusting boys were, each female player impressing upon the others how much she had personally been chased, while sympathizing with her female playmates’ expressed concerns about the “over-eager” behavior of the male participants. This sometimes led to complaints from the girls to (generally female) supervising adults; typically such complaints were made by one or two girls on the behalf of another member of the female friendship group. This often seemed to be part of the fun for children of both genders, the adult reinforcing the girls’ pretended outrage, and the boys being marked in public by the adult remonstrance as a successful “chaser” in front of both male and female peers. Girls exerted a certain amount of power over boys in this respect, in that their construction of the “telling” process could be a deciding factor in whether a mild admonishment was administered, or a more severe admonishment and punishment was the eventual adult response. Boys seemed to relish mild admonishments in passing, which enhanced their status by marking them out as rule breakers, but they clearly did not enjoy more severe disciplinary responses, which often involved a short “time out,” and, as such, they sometimes collaborated to persuade a group of girls not to ‘tell on’ a male player when they judged that the adult response would be severe.

In summary, there appeared to be an intricate web of inter and intra gender cooperation and competition unfolding within such mixed gender chasing, the boys forming a hunting party that might engage in protection of its members, but with the underlying competitive purpose of individual recognition as a “good chaser” by peers of both genders and possibly supervising adults. The girls usually initiated the chasing games and subsequently competed to be “most chased,” while collaborating to protect one another from the boys’ attention when it became too

energetic, marshalling adult assistance when necessary. This observational evidence provides a clear example of children constructing and practicing complex social skills, simultaneously competing and colluding within a highly gendered, independently directed activity.

R&T Play: Lessons in Life

As predicted by Zarbatany, McDougall, and Hymel (2000), children exhibited a more complex set of behaviors in mixed gender interaction than was observed in single gender activity. Charlesworth and Dzur (1987) noted the complex combination of competitive and cooperative behaviors elicited by their experimental procedure in four- and five-year-olds; this ethnographic study observed the same behavioral sophistication in action amongst this age group in independently generated free play activities. The highly gendered “tag and chase” narratives for mixed gender play appeared to be a simplified physical mirror of more abstract, linguistic adult “flirting” behavior, the play activities created by these children in mixed gender chasing mirroring and simplifying aspects of the adult social world. Both adult and child mixed gender interactions begin with a negotiation of availability, the girl-to-boy touch and run invitation foreshadowing the female choice aspect of adult human mating described by Geary, Vigil and Byrd-Craven (2004), and the “chase” that then follows necessitates that gendered roles are undertaken by each player, including complex inter and intra gender cooperation and competition around such interactions. The human capacity for language and symbolism creates more varied and sophisticated R&T play activities than those observed between non-human primates; within human R&T play, children use (and further develop) language to create their first independently-mediated gendered narratives which, at this point in development, underpin physical activities which are comprised of basic motor actions that can be traced back to more primitive evolutionary roots. Such physical interaction has been observed within the juvenile R&T behavior of non-human animal species; for example the “touch and run” aspect of “kiss-catch” uses a basic action found in the play of the “monkey tag” games described by Bertrand (1976), while with regard to the human species, Carroll (2004, p. 109) suggested that, “by far the largest proportion of stories (created by adults) that are not strictly oriented to survival are organized around the mating game.” This was also clearly evident in the mixed gender play undertaken by this sample of children. My research participants’ kiss-catch play can therefore be proposed to use physical behavior that can be observed in other primate species, while also being underpinned by the bio-psychology of specifically human sexual selection.

Several previous researchers have proposed that male single sex R&T play forms the basis for male socialization, in that boys who successfully engage in the mock-fighting involved in such play are creating neuronal pathways that will later be developed in rule-based sporting activities and language-based competition, while those who are unable to grasp concepts of play fighting in early childhood are at risk of becoming less socially successful, more aggressive adolescents (Orobio de Castro, Veerman, Koops, Bosch and Manhowwer 2002; Pellegrini, 1993a; Pellegrini, 1993b; Sax, 2005). There is as yet no data to suggest what adolescence may bring for children of either gender who do not successfully engage in mixed gender R&T play, but this would certainly be an interesting focus for future research. Another issue raised within this paper that is worthy of further research is the specific roles of girls in mixed gender R&T. As predicted by Geary et al’s (2004) meta-analysis of adult courtship findings and Hrdy’s (1999) review of female primate behavior, they seemed far from passive in these activities, frequently appearing to take an organizational role.

It must be noted that these findings were made in small-scale research, focusing on one age group in one specific geographical location. However, it is clear from the body of empirical evidence relating to R&T play that such free play activities, whether they are undertaken within mixed or single sex groups, put children into authentic situations where they can simultaneously practice spontaneous, autonomous, competitive and co-operative interaction, developing many of the complex social skills that fundamentally underpin primate adult life. While it may be possible for a human adult to directly teach concepts relating to social and physical interaction skills via closely adult-directed activity, it is unlikely that the second-hand nature of such an experience could effectively create the intricate neuronal pathways that will be developed by a child who has the regular opportunity to independently test and recalibrate interaction skills within the social ‘classroom’ of the playground: “collaborative learning is a process of cultural creation rather than cultural transmission” (Bjorklund and Pellegrini 2002, p. 201).

This analysis contradicts the perspectives of some early-years researchers, who are convinced that adult defined, structured tasks are greatly superior to free play, due to adult-led goal structures. Sylva et al. (1980, p. 64) argued that R&T play is problematic because it, “seems to evolve spontaneously with no opportunity for planning, feedback or correction;” however, this fails to recognize that within a complex organic social environment, “the developing organism functions as a resource for its own further development” (Oyama et al., 2001, p. 5), feedback emerging from the reactions of the other players, giving children opportunities to independently problem-solve and autonomously self-correct in order to remain within the group activities. R&T play is a natural, evolved juvenile behavior that creates a vital socializing experience for all young primates, especially the linguistic human being, serving a key function within children’s development by allowing them to operate spontaneously within a forum which facilitates learning about complex physical and linguistic responses from other children of both genders. My research indicates that within R&T play, children create shared narratives through which they can practice independently controlled and motivated behavior relating to both competition and cooperation within their peer group, whether they are male or female. Further research is needed to confirm the reliability of these findings, and to determine how such shared R&T narratives may change and develop through the later years of childhood.

R&T Play: Evolutionary Past, Pedagogical Future

R&T play is the developmental activity in which we can most clearly discern culture and biology interacting in the play of juvenile, evolved human primates growing up within human social environments that are highly dependent upon original linguistic constructions. R&T motor behaviors can be very effectively traced back to earlier mammalian species, but the uniquely human narratives that children invent to underpin and explain their R&T activities clearly mark the differences between the R&T activities of human and non-human animals. Bruner (1976, p. 56) proposed that schooling which is separated from a natural social environment, “provides no guide, only knowledge...These are the conditions for alienation and confusion.” In the 30 years that have passed since the publication of these words, increasing adult direction of children’s lives and decreasing opportunities for collaborative, independently directed free play in both the home and school environments, added to concerns about a perceived deterioration in the socialization and mental health of western youth, have only added to their salience. “Play...is what children are ‘intended’ to do. Remembering this may cause us to think twice before

modifying children's environments to achieve...more focused learning opportunities in schools at the expense of play" (Bjorklund and Pellegrini, 2002, p. 331).

When evolution, culture, and developmental psychology are considered within a "biocultural" synthesis (Mallon and Stich, 2000), the vital importance of what children do on playgrounds becomes very obvious. Fostering recognition of this fact is currently a crucial issue for education professionals, in the pursuit of a more holistic developmental approach, particularly within early-years settings. It is time to recognize children as the evolved linguistic primates that they are, subsequently elevating the status of social free play until it is recognized as an equal developmental partner to structured activities directed by adults within formal classroom environments.

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