Marbles and Machiavelli
The Role of Game Play in Children's Social Development

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The authors review several case studies of children engaged in rule-governed play and conclude that the process of learning rules—and of breaking them and making new ones—promotes what they call gamesmanship. They link the development of gamesmanship to the theory of Machiavellian intelligence, which considers social interaction primary in the evolution of human intelligence. They also question the benefits of adult-managed child play and assess the impact it may have on the ability of children to develop gamesmanship. **Key words:** adult-managed child play; evolution of human intelligence; free play; gamesmanship; Machiavellian intelligence

EVOLUTIONARY PSYCHOLOGISTS generally agree that human intelligence is profoundly social. Humans have survived because they shared food, defended against predation and aggression, and made groups responsible for the care of infants and toddlers.[1] These activities required forging bonds with conspecifics, reading the intentions of others, creating allies, convincing others to follow along, and so on. Students of human behavior refer to these skills and habits collectively as Machiavellian intelligence (MI).[2] The catalog of these traits is extensive and by no means as limited as the term Machiavellian might imply.

Surprisingly, there has been relatively little discussion about how MI emerges in children. The abundant evidence for the arrested development of social intelligence indicates that MI is not hard wired, nor is there evidence that it is taught.[3] In this article, we explore the possibility that children develop MI though play. We focus primarily on behavior deployed in game play, but we also identify other areas of play that seem to exercise social-interaction skills. The game of marbles, for example, presents a particularly good example of how children may deploy Machiavellian Intelligence.

Piaget and Marbles

Children of Ancient Rome played marbles more than two thousand years ago, and the game probably stretches back farther to a time when children used pig's knucklebones as marbles. Pieter Breughel's 1560 iconic painting *Children's Games* clearly depicts the game of marbles (among seventy-nine other distinct games and types of play). In Adriaen van Ostade's *Children and Dog* from 1673, boys play marbles outside a tavern. The use of perfectly round, durable spheres took the place of bones and found objects when the technology needed to produce them inexpensively became common. Today, marbles can be found all over the globe. One of the authors recently recorded children playing marbles in Madagascar, Sulawesi, and Uzbekistan.

In *The Moral Judgment of the Child*, Jean Piaget observes children of different ages playing marbles, and he uses the game to illustrate a child's passage through various phases before arriving at a mature, fully moral understanding of social conventions. Humans are tool users, and young humans manipulate objects. With their perfectly polished, round orbs, marbles encourage the development of small motor skills and digital finesse. Watching children play marbles, we first see the refinement of manual dexterity. And we can also observe the development of social intelligence or MI in the *gamesmanship* of children as they play marbles.[4] Children deploy such gamesmanship, for example, when they manipulate the rules of the game and bluff each other to enhance the quality of play and their own success. Gamesmanship is also evident in their development of social understanding, of an appreciation of rules as rules.[5]

British folklorists Iona and Peter Opie documented three basic versions of the game, but the variation in the rules concerning marbles is staggering.[6] Piaget considered it critical that the game could be played at various levels so that very young children might play even without understanding most of the rules. "Children's games," he wrote, "constitute the most admirable social institutions. The game of marbles, for instance . . . contains an extremely complex system of rules, that is to say, a code of laws, a jurisprudence of its own."[7]

After documenting the primary dimensions of the game, Piaget began to probe the players' cognitive representation of the rules. "You begin," he said, "by asking the child if he could invent a new rule. . . . Once the new rule has been formulated, you ask the child whether it could give rise to a new game. . . . The child either agrees to the suggestion or disputes it. If he agrees, you immediately

ask him whether the new rule is a 'fair' rule, a 'real' rule, one 'like the others,' and try to get at the various motives that enter into the answers."[8]

Piaget teased out distinct age-dependent styles in children's approaches to marbles. Initially, a child plays with the marbles as interesting objects but engages in no game per se. By about age four, a child plays the game, knows how to make the right moves physically, and understands the necessity for taking turns. "The child's chief interest is no longer psycho-motor; it is social," Piaget wrote.[9] The child can imitate the model provided by a more mature player but has no real sense of strategy or of how to increase the likelihood of winning. By age eleven, a child is a walking Hoyle on marbles and can explain every rule and every exception but does not yet grasp rules as rules. A child still sees them as immutable. By thirteen, players understand that the rules are arbitrary and conventional.[10]

Like so many aspects of childhood, playing marbles and engaging in other child-organized amusements are rapidly becoming extinct. Should we be concerned about this? Is a fondness for old-fashioned games purely sentimental? We do not believe so. As opportunities for children to engage in negotiable, rule-governed play dwindle, scholars grow increasingly excited by the possibilities of Machiavellian Intelligence (MI).

Gamesmanship and Machiavellian Intelligence

There is a revolution underway in our thinking about the *sapiens* part of Homo sapiens. One useful starting point is Richard Byrne's *The Thinking Ape.* He writes, "The essence of the Machiavellian intelligence hypothesis is that intelligence evolved in social circumstances. Individuals would be favored who were able to use and exploit others in their social group, without causing the disruption and potential group fission liable to result from naked aggression. Their manipulations might as easily involve co-operation as conflict, [and] sharing as hoarding."[11]

Related ideas have come from comparative research on social primates.[12] The long-term success of hominims seems to derive from successful group living. Humans are not large, speedy, or particularly efficient hunters. But they are very good at sharing the labor and sharing the fruits of that labor, at caring cooperatively for their young, and at banding together to protect against predators.[13] Successful individuals (in terms of their "inclusive fitness") both fit in with others and garner resources and support through diplomacy. Referring specifically to play among foraging bands, Gray notes, "Leaders in social play

exert leadership not by forcing their own wishes on others nor by evenhandedly treating all players by the same standards, but by being sensitive to each player's wishes and proposing rules and procedures that can accommodate them all."[14]

MI theory has steadily marshaled a wealth of empirical support.[15] One recent study pointed to the rigors of social intercourse (as opposed to climate or ecological variation) as driving hominim brain growth.[16] Extrapolating from this suggestion, we argue that if children have Machiavellian brains and if brains need to be exercised to fully develop, then marbles and similar games make a perfect mental gym. The key elements of the activities in this gym are rule-governed play, flexibility in applying the rules, and an absence of adult umpires. In short, children must be free to construct successful gaming sessions without adult guidance or interference. Given that, let us consider how kids develop MI in game play.

Game Rules and Social Rules

Relatively few of the hundreds of historical and anthropological descriptions of children's games actually describe children in the process of playing. Most descriptions provide just a dry catalog of the rules.[17] Still, we can make a number of generalizations from these descriptions. Because toddlers are usually under the care and supervision of their older siblings, the games they play are flexible enough to permit their participation. Older, more expert players handicap themselves, for example, to ensure that learners can enjoy some success, and they introduce the complexities of the rules gradually. In one Yucatec Mayan community, a neighborhood play group of mixed age and gender play games where winning is far less important than maintaining amicable relations. Players—in their roles as child caretakers—want to avoid cries from an unhappy charge that might attract scrutiny and anger from an adult.[18] In Liberia, Kpelle play groups are not so closely tethered to the home as those in the Yucatan, and caretakers can be less solicitous. There, younger children remain spectators until they have figured out the rules themselves. Older, more-competent players still victimize younger, less-competent ones even after they are admitted to the game.[19]

Aymara boys in the Andes play marbles—girls play jacks—while herding their flocks far from the village. Ben Smith's careful description of these games complements his in-depth analyses of speech and social-interaction patterns during play. Smith discusses the importance of *qhincha* (bad luck) in marbles. By confronting and enduring qhincha in the game, boys successfully fend off

accusations of being feminine or homosexual. By implication, a boy who keeps control of himself when something goes wrong (a pebble in the path deflects his shot, say, or a toddler tramps through the ring of marbles) demonstrates the "chacha-ness" or "toughness" that reflects masculinity.[20]

Studies of Game Play in the West

Ethnographic studies of game play in contemporary Western subcultures add considerably to our understanding of the social rules that can trump game rules. Research by Linda Hughes on a ball game called *four square* serves as an excellent example. The legally sanctioned moves include the *slam*. Hughes' explains:

> A slam is a hard bounce, high over the receiving player's head. It can be difficult to return and thus constitutes one way players can try to deliberately eliminate another player from the game . . . a slam was usually understood to be prohibited by the rules. Despite this prohibition, slams were regularly used without any indication that players perceived a game rule to have been violated. Players also felt obliged to consider such things as the heights of players involved, their relative skill levels, and their degrees of engagement in or distraction from play. A low, easy bounce might constitute a slam to a small, inexperienced, or temporarily distracted player, but not to an older, more skilled, or attentive one. At another level, players' interpretations of slams were also influenced by relationships among the players involved, and even by who would come into the game next if a slam was successful.[21]

Social considerations also dictated that cooperative goals and the long-term maintenance of harmony within peer groups overrode competitive, individual goals.[22] Studies in Sweden on four square show that when girls played in same-sex contests rather than with boys, their approach to the game changed dramatically. In same-sex contests, girls manipulated the rules and altered their playing behavior to accommodate weaker and less-accomplished players.[23]

Ethnographic studies of hopscotch suggest the game offers an insight into the way girls play not unlike the insight marbles offer into the way boys play. Anna Beresin's *Recess Battles* looks at the contested nature of game play during

recess. One contest pitted female students at Mills School against a well-intentioned gym teacher who imposed an official version of hopscotch. "Without the negotiation that the game provided," Beresin says, "the girls lapsed into boredom."[24] The girls were much happier when they were free to modify—or invent their own variations of—hopscotch. Variations and inventions included "walksies, helpsies, and red, white, and bluesies." Helpsies become necessary when the hopscotch court grows so cluttered with personal markers or "guys" that girls literally lift each other from one position to another.[25]

Marjorie Goodwin's research on jump rope offers similar observations. The game provides ample opportunities "for negotiation of rules: who can jump and what the turn order will be, who can be a turner, what role a newcomer will take, how fast (or slow) the rope is to be turned and in which direction, what rhyme will be used, etc, etc."[26] Goodwin also documents ethnic variation in the ways that African American, Latina, and Anglo American girls play games. Girls from ethnic minorities enthusiastically cultivate competition and conflict while white girls mute it. Again, the official rules and structure provide only a framework and fail to account for what actually happens. The conflicts do not derail either game play or friendships but, instead, all the girls exploit them for opportunities to develop and display virtuosity in discourse and social interaction.[27]

These studies confirm that play groups are hardly awash in the flow of good feelings. Vivid accounts depict protracted arguments about rules and their application. Particularly with older children who tend to play in homogenous groups with respect to age and gender, games are less about learning rules and adhering to them than about learning to negotiate. From the Opies' work on marbles and Goodwin's on hopscotch and jump rope, we learn about the constant struggle between individual attempts to gain an advantage, accompanied by frequent cries of "foul," followed by negotiated agreements that permit the game to proceed. Collectively, the diplomatic skills children employ in these contests are referred to as gamesmanship.[28]

Make-believe play offers another opportunity for children to practice gamesmanship. Such a statement may seem counterintuitive because scholars of make-believe play emphasize its constructive, inventive, rule-flaunting behavior.[29] However, Furth argues that children in make-believe play in the United States and South Africa considered rules "an important component that held the play together. Moreover, making or breaking rules made the play interesting."[30] Vygotsky claims, "there is no such thing as play without rules."[31]

According to Furth's account of girls pretending to prepare for a ball, they "made rules about the play frame in order to safeguard the aesthetic integrity of the

play."[32] Players attend to social conventions and the patterned behavior of adults, Furth says, in order to construct rules that scaffold their play. They create a play frame that functions much as do the rules in marbles and hopscotch. Once the players establish the rules, they can bend them and manipulate the game play. So, for example, Furth's transcription of "getting ready for the ball," shows older girls bending the play frame to assuage Celia, the youngest participant, who doesn't want to be "little" and hence, ineligible as a target of the Prince's attentions.[33]

Adult-Managed Play and Video Games

Unfortunately, current child-rearing practices have largely expropriated the opportunities for children to exercise gamesmanship and MI through unsupervised play. Adults now thoroughly manage and script most children's activity. Gary Fine's ethnography of Little League has become the definitive study of adult-managed play [34] He notes that the official Little-League rule book ran to sixty-two pages in 1984 (and to one hundred pages as of 2009)[35] and that, in dramatic contrast to games organized by children, in "Little League, negotiation by players is unthinkable."[36] Indeed, when players attempt to protest an umpire's call, for example, coaches and others call them "unsportsmanlike."

For some parents, Little League is only the first stage in the development of their children's talents. Wealthy parents of Little Leaguers aspiring to become Big Leaguers can enroll them in a private academy, IMG Academics, where students practice their sport four or more hours a day at least five days a week. Even the coaches find the attitudes of the children and their parents extreme. One coach noted that he "sometimes finds himself teaching children how to be kids. For a change of pace, a coach tries to get the boys to organize their own games, or he'll show them stickball or some other derivative form of baseball. 'They can't do it very well,' he said. 'And they don't like it.' They're like: 'If I'm going to play baseball, I want coach around. I want to be in uniform and I want an umpire.'"[37]

The baseball players are not unusual; a recent U.S. survey suggests that children themselves prefer to have adults organize their lives. They think that organized youth activity is a good thing—that the alternative is to hang out with friends and suffer boredom because there is "nothing to do."[38]

Research on Australian preschools and block play strongly suggests that even when adults do not actively direct the play, the presence of a teacher reduces

the need for negotiation and compromise. Even then, however, stronger, big-ger boys successfully exclude those of lower rank, they just do so quite subtly, without signaling "bullying" to the teacher.[39]

Growing evidence indicates that in addition to adult management of what were once child-initiated games and pickup sports, parents—at least those among the contemporary intelligentsia—are taking control of make-believe play as well.[40] This recent change in the way parents behave arises from their attempt to fill in for the siblings and peers their increasingly isolated children do not have, especially in urban settings.[41] Parents also seem to feel that a child's unguided play will not yield the kind of results educationally that parent-directed play yields. And, importantly, parents fear their offspring may suffer physical or psychological harm if they play with kids their own age.[42] Parents, for example, sometimes view marbles as dangerous because a child might swallow and choke on one.[43] Despite such worries and intentions, curtailing play initiated by chil-dren seems likely to attenuate—if not destroy altogether— opportunities to develop the skills associated with gamesmanship.

The Opies blame the decline in the free play of children on this rise in adult-managed games and sports, but we might also suggest video games as a major factor.[44] Recent surveys indicate that children under six years old engage with video (film, television, electronic games) for several hours a day.[45] No com-parable survey of involvement with face-to-face, unsupervised, group game play is available, but we must assume that the time allotted has declined—to zero in many cases.[46] There are two obvious problems with electronic forms of entertainment for young children.[47] One, they usually play solo or with limited unscripted interaction; and, two, the rules or scripts can not be easily altered.

In short, we believe that traditional games and make-believe play are less and less a part of modern childhood because adult-supervised recreation and play with socially isolating media have replaced the more fertile grounds for play—recess, neighborhood play groups, and large families.

Looking for Solutions

Parents, schools, and municipal authorities must now deal with school-aged children who spend less time in unsupervised free play with peers. These kids may lack the social skills they need to engage in rule-governed play and to sustain game play successfully. As Vygotsky noted, children need to exercise

impulse control, or play ceases.[48] Schools severely curtail recess because more bullying may happen than play, and the bullying produces tears, of course, not smiles.[49] This is increasingly true even for middle-class girls. A recent *New York Times* essay speculated after noting the rise of bullying: "Experts point to a shift in childhood play, with a focus on controlled environments, techno-goodies, and material objects. Instead of working out issues themselves during free play outside, children are micromanaged by parents who step in to resolve conflicts for them."[50]

There is hope. Parents, schools, and municipal authorities are addressing the issue. Some school districts and municipalities hire playground or recess coaches "who hope to show children that there is good old-fashioned fun to be had without iPods and video games and [who'll help] students learn to settle petty disputes, like who had the ball first or who pushed whom, not with fists but with the tried and true 'rock-paper-scissors.'"[51]

"Tools for the Mind," an innovative preschool program, builds on Vygotsky's insights in using play to train children to control their impulsivity.[52] Social critics warn parents to allow children greater freedom, particularly in play.[53] As evidence that further decline is not inevitable, consider that recently at the Horsham Primary School in western Victoria, Australia, March was declared Marbles Month. The game, school officials promised, would be vigorously promoted.[54]

Notes

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4. David F. Lancy, *The Anthropology of Childhood: Cherubs, Chattel, Changelings* (2008), 192.

5. Jean Piaget, *The Moral Judgment of the Child*, trans. Marjorie Gabain (1965, first pubished 1932).

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7. Piaget, *The Moral Judgment of the Child*, 13.

8. Ibid., 25.

9. Ibid., 45.

10. The ages at which these milestones are reached should, based on subsequent research on cognitive development, be taken as merely suggestive or approximate.

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12. Hrdy, *Mothers and Others*.

13. Dario Maestripieri, *Macachiavellian Intelligence: How Rhesus Macaques and Humans Have Conquered the World* (2007).

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25. Ibid., 53.

26. Marjorie Harness Goodwin, *The Hidden Life of Girls: Games of Stance, Status, and Exclusion* (2006), 127–28.

27. Marjorie Harness Goodwin, "Games of Stance: Conflict and Footing in Hopscotch," in *Kids Talk: Strategic Language Use in Later Childhood*, ed. Susan M. Hoyle and Carolyn Temple Adger (1998), 23–46; Marjorie Harness Goodwin, "The Serious Side of Jump Rope: Conversational Practices and Social Organization in the Frame of Play," *Journal of American Folklore* 98 (1985): 315–30.

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29. Schwartzman, *Transformations*, 25.

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31. Ibid., 94.

32. Ibid., 16.

33. Ibid., 20.

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