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**Ilaria Grazzani & Jens Brockmeier**

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# Language Games and Social Cognition: Revisiting Bruner

Ilaria Grazzani<sup>1</sup> · Jens Brockmeier<sup>2</sup>

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## Abstract

This paper discusses the notion of language games as cultural practices in children's early linguistic and socio-cognitive development. First, we trace the emergence of this concept in Jerome Bruner's experimental and theoretical work at Oxford University in the 1960s, work that was informed by the thinking of Wittgenstein and Austin, amongst others. Second, we provide a systematic historical account of how Bruner has influenced more recent research traditions in developmental psychology, especially in the field of social cognition. Finally, we hone in on one specific approach within this field developed by the *Laboratory for Developmental and Educational Studies in Psychology* at the University of Milano Bicocca.

**Keywords** Language acquisition · Language development · Social cognition · Language games · Cultural practices

## Language Games Between Philosophy and Experimental Psychology

Jerome Bruner was a psychologist with unusually far-ranging interests and curiosities. He had the rare gift of combining the qualities of a wily experimentalist with those of a philosophical thinker. He also nurtured a life-long interest in the arts and literature, and this helped him to advance the project of narrative psychology, which took center-stage in the 1980s and 1990s. However, his literary fondness had its roots in concerns developed much earlier. Reflecting on how he initially came to psychology, he remarked in an interview given to mark his 100th birthday: "As a kid, I was always interested in what made people come to their conclusions. But I found much more interest in reading novels. Somewhere along the way, I got to thinking about what was

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✉ Ilaria Grazzani  
ilaria.grazzani@unimib.it

<sup>1</sup> University of Milano Bicocca, Milan, Italy

<sup>2</sup> The American University of Paris, Paris, France

going on inside people's heads. My literary friends, writers, and novelists had as much influence on me as psychologists did." (Weir 2015, p. 48). In his later years, Bruner added to this mindset still another "mode of thought", law, a mode of thought and practice that he viewed as a further means of exploring human psychology and culture.

In this paper, we first hone in on Bruner the psychologist-philosopher, specifically by reconstructing his approach to the notion of *language game*. Bruner was one of the first researchers to draw on this notion in exploring the riddles of children's language acquisition. He understood it as a process that was closely related to the child's entry into the cultural world. He took Wittgenstein's (1953/2009) concept of "language game" as a theoretical lens through which to explore what Vygotsky (1978) termed "higher psychological processes." He operationalized Wittgenstein's language games – 'language games,' in the classic Wittgensteinian sense, is not just a metaphor" (Bruner 1983, p. 10) – for the empirical study of children's early linguistic activities, following Vygotsky in conceptualizing them as sign-mediated interactions between children and their caretakers.

Bruner's work as a developmentalist and theorist in the 1970s, the period of interest to us here, was experimental and conceptual in equal measure. Central to both his developmental and the theoretical perspective was the idea of language as a complex system of semiotic or sign-mediated processes encompassing both linguistic and pre-linguistic socially-structured activities. In learning to master various forms of social interaction, children pick up the meanings that are conveyed and negotiated in these exchanges. They initially acquire some knowledge of the "real", before going on to engage with the mysteries of grammar and semantics. First developing a sense of the meanings that are at stake, they then build up a sense of the language required to articulate and manipulate these meanings in a more complex and efficient manner. Thus, as Bruner saw it, children not only learn a language and the forms of interaction and social cognition that language realizes but also master the basic "acts of meaning" of their own cultural community (Bruner 1990).

This is one reason why the idea of meaning as something that is learned and further negotiated in social interactions – among which linguistic interactions are pivotal – became the guiding light of a variety of subsequent lines of inquiry in developmental research. We discuss one such area of research in the second half of this paper, drawing on some of our own work on children's social cognition. Grounded in Bruner's pioneering work, this strand of research has been developed over several projects carried out at the *Lab for Developmental and Educational Studies in Psychology* at the University of Milano Bicocca. A key part of the rationale for this work is that children, as has now been confirmed by a myriad of studies, not only learn the meanings of words and expressions through their social interactions and frequently playful negotiations; they also acquire the meanings of culturally important forms of social cognition, such as understanding their own and others' thoughts, emotions, and motivations.

## The Clutter of Life

But before turning to this more recent work, let us say a few more words about Bruner's discovery of the pivotal role of language games in children's language acquisition in the 1970s, which we see as his key breakthrough on the way to a cultural psychology of

development (Grosso et al. 1999). Bruner himself described this breakthrough from a personal point of view in his autobiography *In Search of Mind* (Bruner 1984) and against a theoretical and epistemological backdrop in *Acts of Meaning* (Bruner 1990). Specifically, in relation to children's language development, he offered a summary of his work in this decade in *Child's Talk: Learning to Use Language* (Bruner 1983).

The point of departure for Bruner's studies was investigating children's ability to use the linguistic expressions they acquire to communicate wishes, needs, and intentions, in order to implement joint action with others. The leading research question was "how the linguistic community arranges speech encounters so that the young aspirant speaker can get a hold on how to make his own communicative intentions clear and how to penetrate the intentions of others" (Bruner 1983, p. 10).

This perspective broke with the two paradigms of language acquisition then dominant. One of these claimed that learning words was a mainly individual process following an "inbuilt" psycholinguistic course of development; this was the view of Noam Chomsky and his many followers. The other claimed that the main basis for language development was the individual unfolding of a cognitive support apparatus; this was the view of Jean Piaget and his many followers. (For the record, we should also mention a third paradigm, the associative learning theory of behaviorism, although this perspective had already lost much of its earlier dominance.) In contrast, Bruner showed that learning to talk does not merely involve learning to use words, or syntax, or applying (or constructing) cognitive structures, but rather is a matter of learning how to do things with words (Bruner 1975), namely how to act and interact. Drawing on Wittgenstein's (1953/2009) *Philosophical Investigations* and Austin's (1962) *How to Do Things with Words*, Bruner argued that studying how children learn the meaning of words while focusing on the assumed equivalents of these words in a non-linguistic or pre-linguistic world (as in traditional realist learning theory) is unlikely to shed much light on the mysteries of language development, because it ignores the real-world functions language serves. Chomsky's biology-based psycholinguistic approach (which had dominated the study of syntax in the 1960s) and Piaget's cognition-based "genetic epistemology" (which was the dominant perspective within developmental psychology) were similarly flawed.

Bruner's research program in the 1970s was explicitly designed to challenge these two powerful views. In it, we can clearly see the experimentalist-philosopher at work. In 1972, Bruner moved to Oxford to take up the position of "Watts Professor of Experimental Psychology." From the outset, he actively participated in the intellectual life of Oxford, where the work of Wittgenstein and Austin were then under the spotlight. Philosopher of psychology Rom Harré, who had studied with Austin and taught at Oxford from 1960 onwards, relates that some members of staff at the Department of Experimental Psychology came to think: "We got it wrong. We thought we hired a scientific experimentalist, and what we got is just another philosopher" (Personal communication).

Yet soon Bruner's new program took shape, and he began to carry out far-reaching empirical research at a number of levels. For example, he and his collaborators recorded conversations between young children and their mothers in their Oxfordshire homes. These data were used to examine how children are supported - Bruner would later term it "scaffolded" - by their linguistic community (see also Wood et al. 1976), while developing the language they need to fully participate in social life. In those days, going

to children's homes rather than inviting them into the lab to observe them in experimentally designed settings represented a further break with conventional protocols, and another step towards a cultural psychology. As Bruner wrote, the assumption of his new focus on cultural situatedness was:

“that you could only study language acquisition at home, *in vivo*, not in the lab, *in vitro*. The issues of context sensitivity and the format of the mother-child interaction had already led me to desert the handsomely equipped but contrived video laboratory in South Parks [the location of the Department of Experimental Psychology of Oxford University] in favor of the clutter of life at home.” (Bruner 1983, p. 9)

*Under Five in Britain* was the telling title of the book in which Bruner (1980) presented the results of this research. The new concern with culturally embedded contexts of social interaction was reflected in various new concepts that came to replace the old psycholinguistic and cognitive terminology. One of these was the “transactional format.” A format is a “standardized, initially microcosmic interaction pattern between an adult and an infant that contains demarcated roles that eventually become reversible” (Bruner 1983, p. 120). Through these joint practices, the child learns how to use language. In other words, language acquisition begins before children make their first attempts at lexico-grammatical speech; “it begins when mother and infant create a predictable format of interaction that can serve as a microcosm for communicating and for constituting a shared reality.” (Bruner 1983, p.18). The “collaboration” that occurs in such transactional formats of joint attention, action, and meaning, constitutes the input from which the child then goes on to extract and master the details of language use, of semantics, syntax, and pragmatics. “Given that play is the culture of childhood,” as Bruner explained why one of his research foci was play, “it is not surprising that formats often have a playful, gamelike nature.” (Bruner 1983, p. 121).

From this interactional or, linguistically speaking, pragmatic starting point, Bruner went on to develop a cultural psychology of language development and human development in general. In hindsight, this also represented the point of departure for a new tradition of cultural-psychological research on social development and social cognition. In the remainder of this paper we focus on this new line of research that emerged in the wake of Bruner's pragmatic and cultural turn.

## Language Games and Cultural Practices

We now turn to two specific aspects of the ‘contemporary relevance’ of Bruner's work, which has informed research in developmental psychology since he revolutionized the study of language.

A first aspect concerns Bruner's influence on research into primary and secondary intersubjectivity. Following a shared definition of primary intersubjectivity (Trevarthen 1994), infants have innate attributes for exchanging intentions, emotions and feelings with other humans. Several studies offer a detailed insight into the fact that the child's ‘innate’ readiness to interact with others demands, precisely, the presence of other people. While the ability to engage in a behaviour may have deep biological

underpinnings, the actual exercise of this capacity takes place within, and thanks to, a social process, as observed by Bruner. Social interaction is required to initiate a process of shared or joint construction of the self; at the same time, it is responsible for the child's emergent sense of cultural belonging. Numerous scholars have followed Bruner in this, applying his interactive-constructionist approach to the study of human development. Trevarthen (1994), Fogel (1993), and Tronick (1989), to mention but a few, used micro-analytical observational techniques to demonstrate that the child is already other-oriented in the first few months of life. Thus, even before they begin to use actual language, children take part in proto-conversations and communicate with adults while co-regulating their emotional and affective states via an intuitive mirroring of the other that is not necessarily cognitively mediated. In this view, first-person experience is a rich and detailed source of knowledge that is constantly interwoven with third-person information gained from observing the acts of others. As children's self-experience broadens, their appreciation of others' minds and behavior is enriched as well as their Self construction (Meltzoff 1995).

Bruner's work has also influenced studies on secondary intersubjectivity. These have revealed that from the end of the first year of life and during the second year, the adult-child dyad develops transactional formats underpinned by "shared intentionality". These formats comprise forms of cooperation for the accomplishment of joint or shared purposes or aims which, in turn, are appropriate to the specific cultural context (Tomasello 1998). More exactly, the experimental study of shared intentionality as carried out by Tomasello and his colleagues – and pioneered by Bruner (1983) – has enabled us to advance our knowledge of four key skills. Such skills, that may be observed in the behaviour of human 1- and 2-year-olds but are not displayed by chimpanzees, are joint attention, cooperative communication, collaboration, and instructed learning (Tomasello and Carpenter 2007). The last-mentioned scholars found that while chimpanzees are very similar to human infants in terms of skills such as gaze following or reading intention, they are unable to engage in joint attention and shared interest which are exclusively human capacities that involve truly intersubjective sharing (*ibid.*).

The second reason for Bruner's legacy and contemporary relevance refers to his studies of children's development of social understanding. The break with the earlier traditions of Chomsky and Piaget and the emergence of the new paradigm outlined above gave rise to extensive research programs that investigated, in the home, not only children's early interactions with their caregivers, but also their developing social cognition.

Notably, Bruner's work exerted a strong influence on the line of inquiry into the development of social understanding in English-speaking cultures, initiated by Dunn (1988) and continued by Hughes (2011). Both scholars investigated the development of social cognition or social understanding in terms of children's growing awareness of their own and others' internal or mental states, such as intentions, beliefs, desires, emotions and affect. All of these states are not directly observable but might be inferred from their external behaviours. This area of research is also known as the study of children's theory of mind and emotion. It studies how children develop a comprehension of their own and others' inner states. Dunn and Hughes examined conversational interactions occurring spontaneously in the home, demonstrating that there is continuity between proto-conversations during early months of life and the actual conversation in the following years. In addition, they analysed the relationship between the adult's use

of mental state language when interacting with the child, and the latter's subsequent development of theory of mind. In this way, they demonstrated that the caregiver's use of the psychological lexicon has a clear impact on the child's development of a theory of mind. This important aspect of children's psychological development had been overlooked in the work of Piaget that was entirely devoted to the child's knowledge of the physical world, that is, to inanimate objects.

Our own research has followed Bruner's perspective but widened it. We have explored children's development of social understanding on two new fronts. First, we have worked with children in extrafamilial educational settings, such as infant-toddler centers and nursery schools; this has been quite similar to Bruner's approach, studying the language development of children at kindergarten in Oxford. Second, we have investigated in these educational contexts both interactions among children and interactions between children and an adult, thus taking a look at more complex interactive formats than those of the mother-child dyad.

We found that early childhood education centers, where children spend a significant proportion of their time, offer a privileged setting to explore how language games enhance social understanding. What we have learned from our research in early childhood education settings is that children's developing social understanding of themselves and others is supported by their ongoing negotiation of meaning in conversational exchanges. It is here where their sense of reality emerges. Early interaction among peers, takes the form of a continuous quest for meaning. Children are literally forced to interact with others as cultural subjects, growing into their cultural community by jointly constructing and sharing the meanings of this community (Grazzani et al., 2018c).

For the extrafamilial educational settings that were included in our research program, we devised specific formats, as understood by Bruner. We conventionalized situations generated via regularized and standardized procedures. Put more simply, we used repeated interactive routines in which an adult (a researcher, or specialist) and a group of children "did things together"; this format then was replicated over time. For example, we developed a format based on "reading a story to initiate a guided conversation" in which certain words were launched. This language game technique allowed us to introduce terms drawn from the mental state lexicon (Ornaghi and Grazzani 2009).

The first study in which we experimented with this format (Ornaghi et al. 2011) was innovative in that it was conducted in a preschool setting, rather than in homes, and involved groups of children, rather than just dyads. Participants were divided into two age groups: 34 three-year-old children and 36 four-year-old children. Each age group was divided into an *experimental* (or *training*) *group* and a *control group*. All participants' linguistic and cognitive development fell within the standards for their age group and there were no differences between experimental and control groups on any of the measures administered before the training.

The study took place in three phases: pre-test, training, and post-test. During the *pre-test* phase, linguistic and cognitive measures were administered to all participants. Between the pre- and post-tests, a 2-month intervention took place. During this period, twice a week and in small groups of 6–7, children were read illustrated stories enriched with the mental state terms *getting scared*, *getting angry*, *wanting*, *remembering*, *knowing*, *thinking*, *believing*, and *deciding*. Each target word was presented twice, through two different stories and training sessions. Each training session lasted about 20 minutes: the story was read during the first 5 minutes, while the remaining 15 minutes were devoted to



different activities according to whether the children had been assigned to the experimental or the control group. At the end of the story, the children in the *experimental groups* were involved in *conversational language games* designed to encourage active use of mental state talk. Following a standard procedure, the adult repeated a sentence from the story which had just been read, containing the target term to be focused on in conversation during the training session. This was important because it allowed the children to relate the activity to a content that they had just heard, contextualizing the language game. The adult explained to the children that the game consisted of using the selected term: “In the sentence I have just read to you, there is the word *think*. Now we are going to play with this word, so the game involves using the word *think*. Remember you have to use it. So, if I say *think*, what does it remind you of? Remember, you have to use this word when you speak, for example with expressions like *I think that...or when I think...*”. During the conversation the researcher stimulated the children to use the target word as much as possible by means of focused questions or comments. In addition, he/she strove to involve all the participants in the conversation. After about 10–15 min of conversation, the researcher wound up the session. The aim of the training activity with the experimental group was to give all children in the group practice in thinking about, and using, the target mental state terms. They were required to make a cognitive effort at both linguistic and metalinguistic levels.

In contrast, after listening to the same story, the children in the *control groups* were allowed to engage in free play and were provided with toys such as jigsaw puzzles and construction games, deliberately selected to generate as little conversation amongst the participants as possible. Post-test measures were administered after the training phase, and the data analyses showed that trained children significantly improved their social cognition, as compare to children who did not experience the language games activity.

Analysis of children’s transcribed conversations suggested that making authentic use of target mentalistic terms (such as be afraid, remember, believe and think) allowed the children to internalise the meanings of these terms. The following is an example of a brief conversational exchange from our data corpus. After reading a story from a book called *The Adventures of Jack and Theo* (in: Ornaghi and Grazzani 2009), in which the main character Jack gets angry, an adult invited the children to play with the words “get mad”, that is, to use them on their own.

ADULT: Well, children, do you remember the story we just read? Jack Dolphin was very angry. Let’s play with the words “get angry”... If I say “get angry”, what comes to mind, what do you think of?

PETER (3 years): I never get mad!

CLAIRE: I get mad when my sister hits me.

VALERY: My mom gets angry when I hit my sister.

PETER [who had begun by saying that he never got angry]...when I get mad, I make like this [pulling an angry face, like the illustration of Jack with an angry expression that the teacher had explicitly pointed out during the story reading].

VALERY (continuing her earlier utterance) ... and when my mom gets mad she smacks me....

This extract from one of our language games illustrates the interplay between the children’s use and understanding of mental state terms, in this case of “get angry.”

Children master the meaning of a term by *using* it, thus they inevitably relate it to specific contexts, situations, actions, and significant others (mothers, sisters), thereby “extracting the meaning of the term from their use of it” (Bruner 1983). Language games of this type might, therefore, be viewed as everyday “forms of life” and “forms of action” that foster the development of social understanding in group conversations.

## Conclusion

In this paper, we have pointed out the relevance of the Brunerian revolution in the study of early child development for today's research. Influenced by philosophy of language and pragmatics that permeated the zeitgeist when he moved to Oxford, Bruner began to study children in the real world, in their homes, in a world composed of interactions and ongoing relationships. He compellingly demonstrated that language proliferates when children take part in interactive situations, most of which are playful. Bruner's change of paradigm has informed later studies conducted by other researchers with the aim of advancing knowledge about the child's early disposition to communicate with others and the unique human capacity for shared intentionality. We propose that research on children's social understanding and, specifically, on how it might be supported by conversations between adults and children about mental states, represents a further contribution to this line of inquiry. These studies have not only involved the observation and recording of spontaneous conversational interactions in the home but also been extended to extrafamilial educational settings. To this regard, in a recent line of research we have focused on nursery settings. In brief, we have carried out studies in which a small group of children listened to a short story from an illustrated storybook developed ad hoc by our research team and containing reference to a range of inner states. We have found that even training 2-year-old children in using mental-state talk during conversation in small groups had a significant effect on their language ability and social cognition (Grazzani et al. 2016b; Grazzani et al. 2016a). These early childhood education contexts, which remain as yet under-researched, appear to be particularly rich sociocultural *ecotopes* or small developmental units of language and social cognition. Thus, in order to also use Bruner's insights in contexts beyond the family, we suggest that greater attention should be paid also to the role of teachers and educators in making nursery and kindergartner more favourable contexts to enhance children's social cognition.

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**Ilaria Grazzani** is a professor at the University of Milano-Bicocca, Department of Human Sciences for Education 'R.Massa'. With a background in philosophy and psychology, she heads up the Laboratory in Developmental and Educational Psychology, which conducts research in educational settings on the theme of children's developing understanding of the social world. She is a co-author of "La psicologia culturale di Bruner" / Bruner's Cultural Psychology (Raffaello Cortina, 1999). e-mail: [ilaria.grazzani@unimib.it](mailto:ilaria.grazzani@unimib.it)

**Jens Brockmeier** is a professor at The American University of Paris. With a background in psychology, philosophy, and language sciences, his interests revolve around the cultural fabric of the human mind, language, and development, which he has examined across a variety of semiotic and sociocultural environments. He is also Visiting Professor at the University of Manitoba, Canada, and Honorary Professor at the University of Innsbruck, Austria. His publications include "Beyond the Archive: Memory, Narrative, and the Autobiographical Process" (Oxford University Press, 2015).