

JÜRGE WASSMANN · BIRGIT TRÄUBLE
JOACHIM FUNKE (Eds.)

Theory of Mind in the Pacific

Reasoning Across Cultures

HEIDELBERG STUDIES IN PACIFIC ANTHROPOLOGY 1



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Edited by
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COVER:

Yupno children playing (Papua New Guinea)

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JÜRGE WASSMANN

Prologue

Small children, three to five years old, look curiously at a package of “Smarties”.¹ Their faces are full of expectation, when an experimenter opens it. Surprised the children realise that only coloured pencils are inside the box. Then the experimenter asks, “What do you think, will other children, who have not yet looked inside, think about the content of the carton?” In Western cultures three-year-olds normally reply, “that coloured pencils are inside.” Thus, their conclusion is entirely based on what they already know. In Western cultures, only children from the age of four put themselves in someone else’s place and say that they would be expecting Smarties. These children have a so-called “theory of mind” (ToM), a perception that subjective perspectives exist.

During an after dinner talk at Stanford University September 2011, psychologist/anthropologist Rita Astuti has formulated it so articulate and concise that I adopt her wording below.

We all have a mind [she, and I join her, assumes]. This assumption, and what follows from it – that you have knowledge, desires, intentions, emotions, beliefs and that it is your knowledge, desires, intentions, emotions and beliefs that explain your actions or lack thereof – is what Theory of Mind is all about. ... [Having it means] having the capacity to go beyond the surface, beyond the behavior and the actions to the intentions, the desires, the beliefs that motivate them. ... When you see someone running, you don’t just see a physical body in acceleration – you see the intention or the desire to catch the bus or win a medal; when you see a hand reaching for an object, you don’t just see a trajectory through space – you see the goal of getting that object; and so on (Astuti 2012).

In the theory of mind the human being and her/his possible relationships to others is at the centre of attention, so is her/his inner life and her/his transparency for others. Is this an essential mind ability, existing in all cultures, since it is so important for a functioning social life? Can our

theories imagine that we might approach other people without assuming that we can know something about what is going on in their heads? The assertion, widespread in many Pacific societies, is that it is impossible, or at least extremely difficult, to know what other people think or feel. We called this idea the doctrine of the “opacity of other minds”. This might sound surprising, since in Pacific societies a person is not only understood as an individual entity, but also as relational, as a knot in a wider network of social relations.

The concepts of the “individual”, the “self”, and the “person” are essential in cultural anthropology and psychology, because in these fields the basic concern can be exemplified, such as the essential question of the human being’s biological equality and at the same time his/her cultural diversity, and how this one is represented. How can such questions be researched? Is there not an insurmountable dilemma? Either one transfers Western tests to other cultures, as has been done by cross-cultural psychology, and which provides good comparability (though data that might be culturally not relevant), or one adapts the procedure to the respective culture and receives at least culturally fair results (which are, however, lacking comparability).

Is there a cognitive and emotional inventory of men, can it be changed or even repressed by culture? There are thought provoking studies, especially from the Pacific region, such as classic research of personhood, which should now be continued with the inclusion of the theory of mind and the connected set of problems of the opacity of mind. All these questions are posed against the backdrop of Pacific societies in transition, which are characterised by a growing influence of global media, global ideas, Christianity, and global goods.

This volume, *Theory of Mind in the Pacific. Reasoning across Cultures* is directed towards an audience of anthropologists, psychologists, as well as cognitive scientists. The results of five interdisciplinary research projects of anthropologists and psychologists are presented. Either, the researchers have closely worked together in the field – the ideal situation – or the psychologists arrived after the ethnographers left the field site.

The five Pacific societies and the respective research-teams were Eva Oberle (a psychologist) and Jochen Resch (anthropologist) on Fais and Yap Islands (Yap State, Federated States of Micronesia), Alexandra Tietz and Svenja Völkel in Tonga, Andreas Mayer and Julius Riese in Samoa, Mirjam Hölzel and Verena Keck among the Yupno (Papua New Guinea)

as well as Anita von Poser (anthropologist) and Bettina Ubl (psychologist) with the Bosmun (Papua New Guinea). The introduction is jointly written by Birgit Träuble and Christoph Konieczny, both psychologists, and Andrea Bender, an anthropologist, the final discussion has been authored by Jürg Wassmann, anthropologist and Joachim Funke, psychologist.

We would like to acknowledge the generous financial support of the Volkswagen Foundation, which sponsored this interdisciplinary research project as part of the overall project “Person, Space, and Memory in the Contemporary Pacific” at the Institute of Anthropology, University of Heidelberg, and therefore, enabled younger scholars, psychologists, and anthropologists, to conduct their field research in different parts of Oceania – a rather rare endeavour. Financial support for this publication was generously given by the Excellence Initiative’s funds – the Innovation Fund Frontier from Heidelberg University.

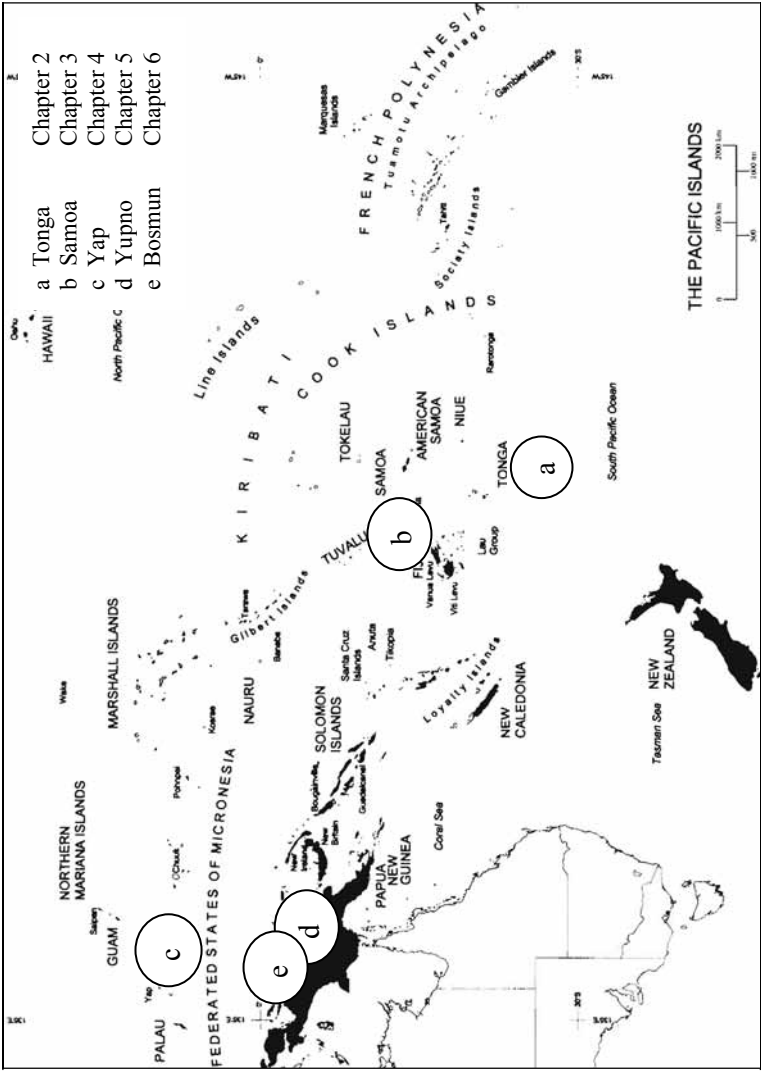
Note

1. Nestlé Smarties are a colour-varied sugarcoated chocolate confectionery, popular primarily in Canada, the United Kingdom, Ireland, Australia, Germany, France, Greece and South Africa. They can be compared to the US’s M&Ms.

Reference

- Astuti, R. 2012. Some After Dinner Thoughts on Theory of Mind. *Anthropology of this Century*, 3, January. <http://aotcpres.com/articles/dinner-thoughts-theory-mind/> [25.5.2013].

The map overleaf, “The Pacific Islands”, is re-printed here with permission from Andrew J. Strathern and Pamela J. Stewart (original in P.J. Stewart and A.J. Strathern 2002. Introduction. In A.J. Strathern, P.J. Stewart, L.M. Carucci, L. Poyer, R. Feinberg and C. Macpherson, *Oceania: An Introduction to the Cultures and Identities of Pacific Islanders*, pp. 2-7. Durham, N.C.: Carolina Academic Press).



Map Prol The Pacific Islands

GUSTAV JAHODA

Foreword: How We Got to Where We Are

The concerns of what have become the disciplines of anthropology and psychology have been overlapping for a very long time. Herodotus (c. 485-425 BC) travelled widely and collected extensive ethnographic data in Egypt, Babylonia, India, Persia, and Scythia (the region north of the Black Sea). The list of topics he covered is a long one including: race, looks, intelligence, virtues and vices, language, occupations and skills, food, sexuality and various rites such as naming and funerals. In addition to direct observation he also questioned local people. Well aware of the dangers of what we now call “ethnocentrism”, he was rarely judgemental.

During the Middle Ages the “Others” were largely mythical, consisting notably of the so-called “monstrous races” (Friedman 1981). With the rapid expansion of travel and exploration in the 17th century a number of books of advice for travellers were published. Several of these, like Bernard Varen’s (1650) *Geographica generalis*, listed various types of customs and institutions that should be recorded, and also mentioned the need to note the (psychological) dispositions of the people, their moral character, qualities, and abilities.

At the end of the 18th century a work appeared that could be regarded as the first modern fieldwork manual. Paradoxically, its author lacked any experience of the non-European world. Joseph-Marie Degérando (1772-1842) was a member of the *Société des Observateurs de l’Homme* which commissioned him to prepare notes for an expedition to Australasia, intended to include the study of savage peoples (Degérando [1800] 1969). At the outset he warned against pitfalls of a kind we would now call inadequate sampling and failures of communication, and recommended something closely similar to participant observation. He stressed the importance of language – his own sphere of expertise – and the need to avoid judging social institutions by the observers’ own alien standards (i.e. ethnocentrism). Degérando also made numerous proposals for the study of psychological features, basing himself largely on the then

prevalent sensationism of Condillac. Many of the topics he discussed, such as sensory processes, intellectual abilities, memory, and child development later became important research areas for cross-cultural psychology.

During the 19th century many explorers, missionaries and travellers brought back information about socio-cultural and psychological aspects of “exotic” peoples, but these were usually fragmentary and unsystematic. Writers concerned with anthropological issues would collect such material and publish it in book form – it would be inappropriate to call them “armchair anthropologists” since they performed a useful function. Among the most prominent ones was Theodor Waitz (1821-1864), a scholar with a background in Herbartian psychology, who proclaimed the principle of “psychic unity”. By contrast Adolf Bastian (1826-1905) travelled widely and his theories are based on first-hand experience. He had attended lectures by Lazarus, one of the founders of the first version of *Völkerpsychologie*, and later put forward the notion of *Elementargedanken* (elementary ideas) that are universal but modified in local contexts:

A comparative psychology can only be established on the basis of ethnology, which traces in the various ethnic groups the genetic development of mental products and explains their local colouring in terms of geographical and historical contexts (Bastian 1868: XI).

Bastian considerably influenced Franz Boas (more about him below) with whom he worked for a time.

Like Bastian Edward Burnett Tylor (1832-1917), sometimes known as “the father of anthropology”, saw the subject as relevant to psychology. His rationalist theory of the origins of magic and religion was essentially concerned with the nature of the human mind.

The end of the 19th century saw a radically new departure. The Cambridge (England) anthropologist Alfred Haddon was organizing an expedition to Torres Strait and took the – then very unusual – step of inviting the experimental psychologist William Halse Rivers (1864-1922) to take part; and Rivers himself recruited two more psychologists (Rivers 1901). All three worked on sensory processes, and the most significant contribution was made by Rivers who dealt with vision. What was new was not anthropological interest in psychology, but the involvement of professional psychologists working in the field. Although it marked the

beginning of cross-cultural experimental studies, it was then not a matter of cooperation between anthropologists and psychologists – they worked in parallel, apart from each other. Rivers himself, having become fascinated by social institutions, became a prominent anthropologist.

Mention should also be made of Richard Thurnwald (1869-1954), a German anthropologist with a deep interest in psychological issues. Before departing for New Guinea (to the Bismarck Archipelago and the Western Solomon Islands) he consulted a number of prominent German psychologists about his plans, and he did carry out a number of pioneering studies of cognitive topics (Thurnwald 1913).

All this evoked little response in either Britain or Germany from the mainstream psychology of the period, except for Frederic Bartlett who became a student of Rivers. Anthropologists were at that time trying to account for cross-cultural similarities, and often invoked psychological explanations. For instance Goldenweiser (1910: 287) proposed that “the phenomena of diffusion [are] replete with psychological problems”. Similarly Boas (1910: 375f) proclaimed “the necessity of looking for the common psychological features, not in the outward similarities of ethnic phenomena, but in the similarity of psychological processes so far as these can be observed or inferred”. As already noted, Boas had been inspired by Bastian and his psychological interest is reflected in the title of one of his most notable works, namely *The Mind of Primitive Man* (Boas 1911). Boas also pioneered the study of American Indian languages, which became the foundation of modern linguistics.

Two of his most eminent students were Margaret Mead and Ruth Benedict, both of whom were well versed in psychology. On her return from her field trip to New Guinea Mead told the young Jean Piaget that his writings about “animism”, based on Geneva children, could not be generalised to children in other parts of the world. Probably because of the psychological implications of her writings, Mead long remained the only anthropologist whose name was mentioned in psychological texts. It might be said at this point that the relationship between the two disciplines has been, and to a considerable extent remains, an asymmetrical one: few psychologists displayed any active interest in the work of anthropologists, while the latter felt a need for some kind of psychology (this point will be further discussed in the epilogue). Malinowski, who had attended lectures in Leipzig by Wilhelm Wundt, the “father of experimental psychology”, even invented his own psychology – though he owed a good deal to Freud, whose appeal was then increasing. The

importance of psychology for anthropologists was later epitomised by Claude Lévi-Strauss who wrote “L’ethnologie est d’abord une psychologie” (1962: 174).

Beginning from the mid-1930s the anthropologist Ralph Linton and the neo-Freudian psychiatrist Abram Kardiner embarked on a series of studies, which on the assumption derived from Benedict that personality and culture are structured in similar ways, sought to establish a causal relationship between them. For about a decade this movement flourished, but by the end of the Second World War was generally seen as, in Jerome Bruner’s words, “a magnificent failure” (Bruner 1974). Yet the appeal of psychoanalysis persisted, especially in the United States where many anthropologists underwent analysis. One of them was John Whiting, who with Beatrice Whiting went on to conduct comparative studies of child development. That period also saw the rise of psychological anthropology, a special field in which anthropologists (usually well versed in psychology) tended to make use of psychological tools; but there was little joint research. The value of such joint research has been demonstrated by a study that has become a classic. It originated from a debate between the anthropologist Melville Herskovits, who thought that culture could influence perception, and the psychologist Donald Campbell who regarded that as very unlikely since he viewed perception as a purely physiological process. Their joint enterprise resulted in a book entitled *The Influence of Culture on Visual Perception* (Segall et al. 1966), though instead of “culture” it should perhaps read “ecology”. Anthropological field workers, trained by psychologists, assessed susceptibility to visual illusions in various parts of the world. The hypotheses were based on ideas that had been put forward by Rivers more than half a century earlier. While the aim had been to resolve a theoretical issue, the fruitfulness of collaboration between an anthropologist and a psychologist in researching specific question in a particular culture has been shown by Wassmann and Dasen (1994a, 1994b, 1998) and Dasen and Wassmann (2008).

Returning to the 1960s, it also saw the rise of cross-cultural psychology (CCP), and during the following decade one still met sprinkling anthropologists (including Margaret Mead) at cross-cultural congresses, but that became increasingly rare; and the same applies to the *Journal of Cross-Cultural Psychology*. Probably one of the main reasons for the change was the decline in the number of psychologists who worked with indigenous peoples and the great increase of studies where

“culture” was equated with nations; and the methods employed frequently require(d) literate participants. However, that period also saw the rise of “cultural” – (as distinct from cross-cultural) psychology. Its theoretical stance is that culture and mind cannot be separated (Shweder 1990) – a topic that will be addressed again in the epilogue. Unlike much of CCP it is not concerned to discover universals, and its focus on particular cultures marks it as frequently straddling the boundaries of anthropology and psychology and its exponents are drawn from both disciplines.

This is a rough sketch of the history and current relationships between anthropology and psychology; it may be noted that so far nothing has been said about linguistics although it is closely concerned with certain broad problem areas. Examples would be the classical themes of colour perception and naming, where there has been considerable progress recently (Tan et al. 2008), or the relationship between language and thought, which continues to be debated. Another important area is emotion, where anthropologists and linguists study the meanings and boundaries of emotion terms. Psychologists, by contrast, are more concerned with the recognition of emotional expressions and the extent to which emotions are biologically based. It is not that anthropological approaches are completely ignored, but they are seen as relatively peripheral. For instance, a recent review article (Matsumoto and Hwang 2012) briefly refers to the work of such figures as Gerber, Howell, Lutz, and White; but less than half a page in an 18-page article is given over to that.

On the other hand as far as cognition – in a very broad sense – is concerned there has been historically, and there is even more now, a great deal in common between the two disciplines as far as their objectives are concerned. In the past that was not always explicit: when Edward Evans-Pritchard (1934) provided acute insights into Azande modes of thought, he was probably not supposing that he was doing psychology! These days the link tends to be quite clear from the outset, as in Maurice Bloch’s (1998) *How We Think They Think* or Scott Atran’s *Folk Biology and the Anthropology of Science: Cognitive Universals and Cultural Particulars* (1998). The “particular” may be exemplified by a developmental study conducted by a joint anthro-psycho team (Astuti et al. 2004) in Madagascar.

The present volume combines different elements from this broad tradition. It is the brainchild of Jürg Wassmann who has long been inter-

ested in problems where anthropological and psychological concerns overlap, and has favoured cross-disciplinary studies (Ammann et al 2013, Wassmann et al. 2011, n.d.). He has assembled a team of (mainly) anthropology PhD candidates with long fieldwork experience in the Pacific and Diploma candidates in Psychology, who did research in five different regions in the Pacific with the aim of testing an important theory of developmental psychology – a task often advocated by cross-cultural psychologists but all too seldom actually accomplished. Their careful work offers general support to the theory, while also documenting certain variations. The volume is thus an important one that substantially advances our knowledge, and as such should be welcomed by anthropologists and psychologists alike.

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1 Human Social Cognition – The Theory of Mind Research

The attribution of mental states such as desires or beliefs is a milestone of human sociality. It is one of the abilities that we share, if at all, with only very few non-human species (e.g., Hare et al. 2000; Plotnik et al. 2006; Tschudin 2006; Bugnyar 2007; for a contrary position see Povinelli and Vonk 2003), and the extent to which we possess this ability is uniquely human. It is also regarded as the fundamental prerequisite for human culture (Tomasello 1999; Tomasello et al. 2005; Call 2009). Attributing mental states to others constitutes the core of each ethnopsychology (Lillard 1998), and the question of how a basic set of assumptions eventually gives rise to such a large variety of ethnopsychological theories is one of the most interesting challenges to both psychologists and anthropologists (Bender and Beller 2013). Yet, these lines of research are rarely related to each other, and particularly in psychology, the focus – for most of the time – remained on the core competencies. This introduction will therefore begin with a brief description of what constitutes the basic competencies related to a “theory of mind” and in which scientific context it has been explored. It will proceed by contrasting different theoretical accounts of how a theory of mind develops, and by discussing to what extent each of these accounts allow for cultural impact on the development process. General findings from studies conducted in Western cultures will then be presented, and the potential for an impact of culture will be discussed in the light of empirical evidence for cultural variation. This will also broaden the focus to adult theories of mind in the context of ethnopsychologies, and to how these may affect children developing awareness for mental states in others. As ethnographic details on each culture under scrutiny are provided at length in the case studies, only the most relevant aspects of Pacific ethnopsychologies will be briefly sketched in this section.

Understanding other minds – developmental perspectives

During the last twenty years, research on young children's knowledge about the mental world, better known as theory of mind research, has become a central topic in developmental psychology (e.g., Wellman 1990; Perner 1991; Astington 1993; Taylor 1996; Flavell 1999; Mitchell and Riggs 2000; Wellman et al. 2001; Saxe et al. 2004; Leslie 2005; Onishi and Baillargeon 2005; Ruffman and Perner 2005; Southgate et al. 2007). The term "theory of mind" was first introduced by Premack and Woodruff (1978) in order to describe the ability to impute mental states to oneself and others in order to explain and predict behaviour.

Already in the fifties, Piaget, undoubtedly the historically most influential psychologist in the field of children's cognitive development, was interested in the development of children's perspective taking (e.g., Piaget and Inhelder 1948/1971). What turns the new theory of mind research into an autonomous scientific field is its philosophical approach to mentalist aspects (Field 1978; Fodor 1978; Perner 1999). Accordingly, Perner (1991, see also Sodian and Thoermer 2006) proposed three criteria for a definition of the mental domain:

- (i) We have direct access to our mental states. That is, we know about mental states like thoughts or emotions because we made respective experiences, and we can attribute mental states to others by taking their perspective.
- (ii) Mental states can be used to infer and predict behaviour, therefore they serve as theoretical constructs within an intuitive behaviour theory.
- (iii) And mental activities concentrate on objects ("thinking of something").

In the case of mental activities such target objects are "intentional", that is, mental target objects do not have to be existent (Brentano 1874/1955, coined the phrase "intentional inexistence"). Furthermore, mental target objects can be misrepresented. For example, the chocolate that I suppose to be in the cupboard is actually in the drawer. The understanding that mental states are not direct reflections of the reality but representations that may be true or false is typically referred to as "representational theory of mind".

Given the important role of theory of mind abilities for our social functioning (e.g., Tomasello et al. 2005; Call 2009), one would assume

that the developmental course of such an important competence should follow a similar trajectory across different cultures.

However, developmental research and the resultant theories on cognitive development have been and still are an enterprise of the West – and yet, they often claim universal validity. Looking back to the famous work of Jean Piaget, we find a meticulously elaborated model of different developmental stages children pass through from birth to adolescence. Piaget was interested in the source of human epistemic processes. He claimed that knowledge is not a state but is constructed by our interaction with the world (“constructivist epistemology”). On the basis of a large number of systematic observations and behavioural tasks, Piaget derived an invariant sequence of cognitive stages, each of which is characterised by a specific structure of knowledge. Even if, in later years, Piaget paid more attention to culture-specific aspects of human cognitive development, his primary focus was on the identification of basic universals of human cognition (quite in the sense of structuralist approaches). In subsequent work, Piaget’s universality-assumption has been challenged in at least three different ways. First, cross-cultural studies allow testing the validity of the assumption that cognitive development follows the same trajectory over different individuals, cultures, and situations. So far, some of the existing cross-cultural studies cast the universality-assumption into doubt (e.g., Bang et al. 2007). However, although solely Western biased research takes the risk of providing only an ethnocentric view on the issues of interest, cross-cultural psychological studies are still scarce (Berry et al. 2002). Contrary to anthropological work with its primarily ethnographic methodology, these few cross-cultural psychological studies use controlled experiments. Second, Piaget’s emphasis on constructivist aspects of the cognitive development hardly admits socio-cultural influences. The child selects and interprets environmental information in a primarily individualistic manner. Socio-cultural influences (e.g., by culture-specific products or by support from other individuals) do not play a crucial role. Here, again, cross-cultural research highlights the impact of socio-cultural factors on cognitive development. Third, recent research has shown that the assumption of a synchronicity of developmental changes across different domains (e.g., social, physical, or mathematical domain) is not scientifically tenable. As a consequence, the so-called domain-specific theories describe knowledge acquisition by distinct processes operating in different domains.

Accordingly, Piaget's assumptions concerning specific age-related stages have been subject of a large number of studies. Using new methods, suitable even for very young children, it has been shown that Piaget might have underestimated children's cognitive competencies. For instance, even two-year-olds are now considered to be able to take another's visual perspective, whereas Piaget postulated such a competency to occur not before the age of six years. Yet, although domain-specific research has cast the Piagetian age statements into doubt, even this approach assumes universal basic competencies that are common to all humans in every culture. Concretely, domain-specific accounts assume that, from the very beginning, we are endowed with so-called core knowledge about a few but highly important and reliable principles in different knowledge domains. For example, infants know that animate beings, but not inanimate objects, can move on their own. Meanwhile, many of these core principles have been identified in a great number of infancy-studies (e.g., Hermer and Spelke 1996; Xu and Spelke 2000; Spelke 2003). Elizabeth Spelke, originator of this core knowledge hypothesis, currently postulates five universal core knowledge systems: two systems for the representation of inanimate objects on the one side and animate agents on the other side, as well as two systems for the representation of more abstract entities like number and geometric forms. Finally, a fifth core knowledge system for the representation of social groups is discussed (Spelke and Kinzler 2007; Kinzler and Spelke 2007). Subsequent development, according to this approach, consists in a gradual enrichment of these core knowledge systems. This enrichment process is determined by the information available in a given environmental context. Thus, the assumption of a universal cognitive basis also implies that socio-cultural factors might influence the formation of mature knowledge systems (e.g., Hespos and Spelke 2004).

Theory of mind development – theoretical impacts

The precise course of the development within the social domain, and particularly the developmental processes regarding the acquisition of a theory of mind, are still subject to debate. Different accounts can be distinguished, each of which claiming more or less impact of external factors on theory of mind development.

(a) In modular accounts (e.g., Leslie 1994; Baron-Cohen 1995), it is assumed that the underlying cognitive structure responsible for a theory

of mind is an innate module, that is activated within the first three years of life. These modules are confined to process highly specific information that is relevant for mentalist interpretations. They are dedicated, automatic, and encapsulated, and their functioning is largely independent of individual differences and social experiences.

(b) Theory theory accounts (e.g., Carey 1985; Gopnik and Meltzoff 1997; Wellman and Gelman 1998) suggest that mental states such as beliefs are theoretical entities within a naïve theory that allows to draw inferences and to make predictions on the basis of one's own or another person's mental states. During development, these naïve theories are subject to fundamental changes from a non-representational theory of mind in three-year-olds to a full-fledged theory of mind in five-year-olds, according to which mental states are understood as independent from reality.

(c) In simulation theories (e.g., Harris 1992; Tomasello and Rakoczy 2003), it is assumed that mental interpretations are not based on theory-like constructs but on the direct experience of our own inner mental processes. According to this view, it is possible to infer other people's intentions and future actions by using our own mind as a model for theirs.

(d) Social-constructivist approaches emphasise the role of experiences in social interactions (e.g., Carpendale and Lewis 2004). They assume that children actively construct a theory of mind in their interaction with other individuals. Specific social experiences are discussed as potential cause for individual differences (and also for cultural differences). For example, the amount and the manner of verbal communication about mental processes seem to have an effect on the development of a theory of mind (e.g., Bartsch and Wellman 1995; Astington and Jenkins 1999; Harris 1999).

(e) Other theoretical approaches focus on domain-general processes that might underlay developmental changes in domain-specific abilities. For a theory of mind to develop, several factors are discussed: changes in working memory (i.e., structures and processes responsible for temporarily storing and manipulating information), executive functions (i.e., general cognitive abilities responsible for planning, cognitive flexibility, abstract thinking, rule acquisition, etc.) or general inference processes (e.g., Bischof-Köhler 2000; Carlson and Moses 2001).

With respect to the universality aspect of theory of mind development, it is first and foremost constructivist accounts like the theory

theory, and the social-constructivist accounts that open the scope for culture-specific influences. These theoretical considerations emphasise the relevance of and the need for cross-cultural research in order to clarify important questions about the ontogeny of our theory of mind competencies, including the question of which aspects of this development are due to nature or nurture. However, as already mentioned, most of the empirical work has been and still is done in the West, and the challenge now is to find out which aspects of the developmental trajectory identified in Western cultures can or cannot be generalised to other cultural regions. This would also enable us to learn more about potential socio-cultural factors that influence the acquisition of theory of mind competencies.

What does Western research tell us about the theory of mind development?

Being interested in the ontogeny of a representational theory of mind, a large number of studies concentrate on the very first beginnings of such competencies. When do children first come to understand the specific characteristics of the social world (interactions with other persons) in contrast to the physical world (actions on inanimate objects)? Within the psychological domain, the question arises of when children come to ascribe psychological states to themselves and to others, and whether these states are understood as mental states according to the criteria described above.

The discrimination between the psychological or social domain on the one side and the physical domain on the other is assumed to be one of the precursors for developing a theory of mind. An increasing number of developmental studies meanwhile suggest that infants distinguish these two domains even by birth (e.g., Spelke 1994; Gelman et al. 1995; Pauen 2000; Rakison and Poulin-Dubois 2001). Within the first half of the first year of life, infants not only differentiate between animate beings and inanimate objects, they also hold different expectations about the behaviour of both kinds of entity (e.g., Legerstee 1992; Flavell et al. 1993; Meltzoff 1995; Spelke et al. 1995; Woodward 2003; Pauen and Träuble 2009; Träuble et al. 2009). For example, regarding early dyadic interactions between infant and caregiver, infants expect highly specific contingency patterns (that is, they are confused if the reciprocal character