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Abstract: The exploration of the mechanisms of cultural heredity has often been regarded as the key to explicating human uniqueness. Particularly early imitative learning, which is explained as a kind of simulation that rests on the infant’s identification with other persons as intentional agents, has been stressed as the foundation of cumulative cultural transmission. But the question of what are the objects of this mechanism has not been given much attention. Although this is a pivotal point, it still remains obscure. I will characterize the notion of action-types and show why they are the genuine objects of cultural heredity. However, this answer is in conflict with the concept of imitation, and the problem arises that, if imitation is conceptualized as simulation and explained in terms of the cognition of infants, the objects of cultural transmission seemingly cannot be passed on by imitation. In order to solve this problem, I propose reconsidering the concept of imitation and to conceptualize imitation as a cooperative activity of infants and adults.

Only humans write novels, do mathematics, cook meals of several courses, build computers, play music, create works of symbolic art, fill in tax return forms and, more than that, can parody all these things. In the light of these unique human capacities, the assumption of the continuity of biological evolution, which generates only gradual differences, seems to be misguided. Therefore, it is widely believed that an explanation of the anthropogeny and the cognitive capacities of humans cannot advance without reference to cultural processes. Especially the exploration of possible mechanisms of cultural transmission, that is, the heredity of acquired capacities, has often been regarded as the key to explicating human evolution and its specificities. This brings the cognitive ontogeny of humans as creators, bearers and re-creators of culture into the focus of interest—in other words: the problem of cultural heredity or, to be more specific, the adoption of culture by children. Particularly the capacity to imitate has been stressed as one foundation of the uniqueness of human cultural evolution. A promising way of explicating imitation as the mechanism to adopt not only short-lived behavioural episodes, but long-lived skills, habits, attitudes and (practical) knowledge as essential parts of cultural practices, is to conceptualize imitation as a kind of simulation, which rests on the capacity to understand other persons as intentional agents and to identify with them. I will focus the following considerations on Michael Tomasello’s approach (Tomasello, 1999 and Tomasello/Rakoczy, 2003) not only because his approach

I would like to thank Claudia Henning, Ingvar Johansson, Henrike Moll, Hannes Rakoczy, Pirmin Stekeler-Weithofer and my reviewers for their helpful proposals, criticisms, and comments on previous versions of this paper; Peter Seaton-Clark for a first proof-reading, the DFG (German Research Council) for its support.

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represents a general account to social learning, (full-blooded) intentionality, culture, and, in the end, the uniqueness of humanity, but also because Tomasello, in contrast to many other developmental psychologists and anthropologists, concentrates on the explanation of the long-lived skills that turn us into cultural beings.

This approach has great potential for the systematization and illumination of the subject discussed here. From a philosophical point of view, however, it raises some conceptual questions concerning its core: the notion of imitation. A first question is, what components, elements, or forms of culture are subject to cultural transmission at all. Genetic heredity transmits genes. But what does cultural transmission transmit? Due to their particular characteristics, I propose action-types to be the objects of cultural heredity (§1). Both the explanation of the concept of action-type (§2) and its comparison with the notion of behavioural strategy (§3) implies a conceptual link between action-types and possible intentions. I propose analysing intentionality as a relation between action-types, communities and individuals—a relation that is intrinsically normative, socially constituted and specific to humans (§4). These conceptual preparations allow a closer examination of the mechanism of imitation and its presuppositions, especially the perception of intentions (§5). Now the question is, whether the proposed mechanism of imitation can do the work of transmitting the supposed objects of cultural transmission. An answer within the sketched conceptual framework is at least problematic: It seems incoherent to claim both that cultural transmission depends on imitation, and that imitation depends on genuinely cultural abilities, namely the ability to identify and ascribe intentions (§6). However, this problem can be solved by modifying the concept of imitation, namely by conceptualizing imitation as a cooperative activity as I will propose (§7).

1. The Transmittable Essence of Culture: Action-types

The notion of culture is, unquestionably, very cloudy. There are probably more than a hundred (‘post-Tylorian’) definitions of culture (see Kroeber and Kluckhohn, 1952), which are often more or less fuzzy, or even contradict each other. For my purposes, however, it is sufficient to determine those elements or structures of culture that are subjected to cultural transmission.

A merely formal definition could determine culture as ‘what can be transmitted by cultural transmission’. This sounds circular. It does not seem to shed much light on the question ‘Which elements of culture are fundamental for the course of cultural evolution?’. However, this notion defines a constraint that excludes all things from culture that are not produced or formed by human agency, all things which can as such neither be taught nor learned by humans. For example, natural needs like food, reproduction or social relations with conspecifics and the corresponding behaviour as such are not part of culture. Only forms and specific ways of how humans meet these needs belong to culture.¹

¹ Culture ‘is the man-made part of the human environment’ (Herskovits, 1948, p. 17); it is ‘what people have to learn or distinct from their biological heritage’ (Goodenough, 1964, p. 36).
A widely accepted and seemingly more suitable type of definition of culture refers to ‘behaviour peculiar to Homo sapiens, together with material objects used as an integral part of this behaviour. Thus, culture includes language, ideas, beliefs, customs, codes, institutions, tools, techniques, works of art, rituals and ceremonies, among other elements.’

This definition makes an important point: artefacts, tools, works of art, ideas, symbolic representation and other entities count as cultural only in the context of behaviour specific to humans, that is, in the context of action. This holds for material objects as well as for the subtler cultural objects, namely ideas and values. We can understand artefacts and tools only if we have an idea of how they are integrated into possible actions. Ideas and values have reality only in actions that manifest them—an idea without any influence on any possible action is not intelligible. For that reason any definition of culture by a mere list of several things necessarily fails. The substance of culture, I propose, is action. Hence, cultural transmission concerns material objects, social facts, ideas etc. only as far as they are part of possible actions.

Therefore, cultural transmission essentially concerns what falls under the notion of action. The (material) embodiments of culture are systematically of second rank, although they are the basis for higher-level cultural transmission. But now another problem emerges: particular actions and behaviour are too ephemeral to be transmitted. They disappear when finished. As singular events (tokens) they are bound to unique circumstances, actors, times etc. and cannot be reproduced for logical reasons. Hence, they cannot be taught and learned. Therefore actions as such cannot be objects of cultural transmission. This sounds like a dilemma: neither material objects alone nor actions or behaviour (qua tokens) can be subjected to cultural transmission—cultural transmission is subjected to entities that are as stable as material objects (e.g. tools and artefacts as material bearers of culture) and at the same time nevertheless not material.

But what kind of entity can be considered as a candidate for cultural transmission, then? Or to be more definite: what is the common and repeatable, and then also learnable, element of action that transcends the singular act?

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3 For the course of my arguments, this claim seems to be a kind of *petitio principii*. Actually, it is not, if the term ‘human’ is not considered as the name of the *biologically* defined species *Homo sapiens*. ‘Human’ is rather a cultural category. However, the biological species ‘Homo sapiens’ and the concept of ‘human being’ coincide at least extensionally. But the category ‘human being’ may, from a logical point of view, contain also other species than Homo sapiens. The categorial line between Homo sapiens and human being is drawn by the formal constraint given by the first definition of culture. Every species that produces mechanisms of cultural transmission may be called ‘human’ in this sense.

4 ‘Culture is not a material phenomenon; it does not consist of things, people, behavior, or emotions. It is rather an organization of these things’ (Goodenough, 1964, p. 36).
My proposal is this: we should regard action-types (or cultural practices, i.e. systematically interrelated action-types)\(^5\) and the corresponding skills and abilities as the real object of cultural heritage. The concept of action-types could help solve the dilemma. Moreover, it opens an account to human action, intentionality and imitative learning, which is not burdened with the difficulties of the belief-desire-approach.

2. What is an Action-Type?

If asked what one is doing, one usually does not refer to present intentions or goals, but answers by referring to an action-type (e.g., writing a paper, baking a cake, teaching a child numbers). Action-types denote the ensemble of matters that give actions its identity and distinctive character. Actions can be right or wrong, adequate or inadequate in different aspects. So the reference to action-types points to the fact that actions have fulfillment-conditions and follow collectively accepted rules and norms, which are fairly independent of the particular agent’s intentions. An action-type \(X\) is determined by all relevant characteristics, which acts \(x\) of that type normally have, and which implicitly determine guidelines of a correct realization of acts of that type. They are usually described by specifying their fulfillment-conditions, especially by answering how-to-do-\(X\)-questions in connection with referring to the generic ends of acts of the type in question.\(^6\) So the explanation of the fulfillment-conditions of an action type often includes action-schemes, patterns, plots, scripts, roles etc. (which, on their part, often describe means and the instrumental structure of the action).\(^7\) Given appropriate circumstances, satisfying the fulfillment-conditions

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\(^5\) I prefer the term ‘action-type’, because its relation to action and intention is due to terminological reasons more obvious and easier to explain than that of cultural practice. The concept of action-type as used here comes from Stekeler-Weithofer, 2002, pp. 65f., the related concept of action-scheme is from Kamlah and Lorenzen, 1973, §6 and Kambartel, 1989, p. 123ff. All these concepts are similar to von Wright’s concept of ‘generic act’ (in contrast to ‘individual act’, cf. Wright, 1963, Chapter III). Another source for the concept of action-type (in German: Handlungsform) is A. Gehlen’s anthropology (see Gehlen, 1964). The notion of ‘speech act’ (as characterized in Austin, 1962 and Searle, 1969) is a good example of the concept of action-type.

\(^6\) Note that, although it plays a central role, the notion of intention does not suffice for determining action-types. According to the widespread belief-desire-model of action, there seems to be no difference: The class of actions identified by intention and the class of actions identified by action-type are seemingly co-extensional in terms of achievement. However, not all actions are achievements. There are actions that lack a predefined purpose, but nevertheless have fulfillment-conditions (e.g. communicating or going for a walk, cf. Gilbert, 1990). Vice versa, a purpose might be achieved by acts of different types. So, despite the fact that its end can often describe the type of an action, the crucial conceptual difference remains.

\(^7\) The notion of schemes, scripts etc. as proposed by Rumelhart, 1975, Schank and Abelson, 1977 and others who deal with social cognition can be traced back to Kant’s ‘Schematismus der reinen Verstandesbegriffe’ (Kant, 1781/1787) and succeeds the ‘Gestaltpsychologie’ of Wertheimer, Köhler. Lewin and others. In my opinion, however, such schemes are not only means of perception, cognition and representation, but are at the same time normative constraints of intention and action.
normally assures that the action is successful on a regular base and not as a matter of mere coincidence, merely ‘a favour of fate’ (Wittgenstein, 1922, 6.374). These ‘things’ not only guide our actions practically and allow for practical inferences and expectations concerning others’ behaviour, but also organize our perception of actions and situations (cf. Prinz, 1997 and Hommel et al., 2001 on ‘common coding’). An action-type also sets conditions for situations in which realizations of acts of that type are normally appropriate, especially with respect to social circumstances like hierarchies, customs, cultural norms etc. (I might be perfect at improvising ad-lib jokes; however, a funeral might not be the right time and place to do so.) These conditions are given by saying when and to which end one does X.

Both dimensions—correctness and, to some extent, appropriateness—together define what counts as an action of that type and how it is to be done. So, the notion of action-type refers to the customs and norms of a more or less determinate community the agent is part of. It stands for the fact that our actions and practices follow collectively acknowledged norms and rules. The formal identity of action-types is thus determined by its fulfillment conditions, including external aspects like the repeatable action-schemes, plots or procedures, on the one hand, and, on the other hand, its internal aspects like a generic goal (or intention) and the judgment of the appropriateness as well as the prospect of success in a given situation. A crucial consequence is this: actions can fail in various ways due to their interrelation with action-types. Another consequence is this: action-types can be actualized within a potentially infinite number of different acts (qua token), which are actions due to their assignment to action-types and their fulfillment-conditions, especially by an assignment of the actor herself (that is, by intention). So action-types individuate and explain actions.

Let me discuss the case of ‘promising’ as an example of an action-type. Usually, i.e. in paradigmatic cases, a promise is given by explicitly uttering a kind of ‘promise-formula’ like ‘I (hereby) promise you ...’. A promise redistributes rights and obligations between promisor and promisee, its content is limited to things that are desirable by the promisee as well as achievable to the promisor, and one of its fulfillment conditions is that the promisor brings about the content of his promise or sincerely attempts to do so. Promises are usually kept; breaking a promise is normally sanctioned in one way or another. Nevertheless, there are typical exceptions and the boundaries of the concept of promising are fuzzy. Obviously, not every utterance of a promise-formula counts as promise, for example, if the speaker is kidding, or if the promisor cannot fulfil the promise in principle, or if the promisee does not want the promisor to fulfil the promise at all. Conversely, to be in force, a promise is not necessarily bound to an explicit promise formula. Sometimes even the omission or mere absence of explicit protest against a proposal might count as a promise.

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8 An accurate expression is the use of the word ‘man’ in German language.
However, whether something counts as a promise (and which commitments and obligations result from it, what counts as a fulfilment and what as a true attempt to fulfil the promise etc.) does not depend on the intentions of the promisor alone, but essentially on a joint ‘decision’ or evaluation of the relevant behaviour in the light of the collectively accepted practical norms of the action-type ‘promising’. Someone who makes excuses, e.g. by claiming that he did not explicitly promise something, although his behaviour usually counts as a promise, as well as someone who insists on the fulfilment of a mere utterance of a promise formula, although the utterance in question actually does not count as a (serious) promise in the given context, either lacks practical knowledge of the action-type ‘promising’, i.e. he disqualifies himself as a competent participant of the praxis in question, or he disqualifies himself for further cooperation.

Despite such borderline cases, we are able to distinguish promises with practically sufficient certainty from actions of other types, say carrying out a threat, even if they deviate from the standard form (e.g. uttering ‘I’m gonna make him an offer he can’t refuse’, as said by Don Corleone in The Godfather surely does not promise a fair deal). Our ability to distinguish and ascribe such types properly does not rest on a fixed set of rules or criteria, but on collectively shared practical knowledge, on norm- and rule competence and an experienced power of judgement. These competences are trained along the lines of paradigmatic examples and become stabilised in communication. Accordingly, the reason for our certainty in distinguishing various action-types is this: if we collectively decide to regard an utterance or a behaviour as an instantiation of a certain action-type, say as a promise, it is an instantiation of that action-type—normally. Of course there can be cases in which the commitment to a certain action-type is wrong. Nonetheless, even the rejection of such an assignment presupposes the norms of the action-type in question; otherwise the rejection would lack determination. Even such a rejection usually refers to action-types, e.g. by claiming that the act was not a X-action, but a Y-action, say a threat and not a promise.

Now it could be objected that the relevant characteristics of ‘promising’, especially its normativity, its social dimension and its link to collective judgements, might not be general for action-types, but might depend on the conventionality and the explicitness of linguistic behaviour. Admittedly, the further we move away from language, the more reduced is the prospect for explicating the standards, norms and the exceptions of action-types as general rules, as everybody knows who ever tried to teach children practices like making a knot or eating properly with cutlery. However, the explicitness and the existence of norms must not be confused. The explication of the action-types and their norms and fulfilment conditions (as explicit rules) remains incomplete in principle, even in case of linguistic behaviour as shown by the borderline cases of promising. Nevertheless, the corresponding actions are practically determined with sufficient exactness. One reason is that knowledge of action-types and their norms is primarily ‘implicit’, or better (em)practical; it is not an explicit knowledge of a fixed set of rules and criteria, viz. a knowing-that, but a knowing-how (cf. Ryle, 1949). The explication of action-types as sets of rules is based on, and has to fall back to, practical knowledge and familiarity with
action-types and their paradigmatic examples.\textsuperscript{9} The explication of the norms set by action-types normally becomes a relevant matter only in cases of misunderstanding, failure or breakdown of cooperation. Another reason is that the assignment of an action-type is at the same time usually both, descriptive and normative with respect to the relevant conditions of fulfilment and appropriateness. So, action-types depend on (at least tacitly, not necessarily verbally) communication and on a kind of agreement. This includes establishing consent on what counts as a reasonable instantiation or projection of paradigmatic examples of an action-type to ‘new’ situations.

3. Action-types and Behavioural Strategies

In a sense, action-types, their standards, norms, rules and paradigms do not belong to the physical world of time, space and causality. They are ‘only intelligible’ and belong to the realm of shared practice, rationality and discourse. Action-types exist as the form of actions (qua their fulfilment-conditions) together with the mutual control of success and the collective evaluation of correctness and appropriateness of actions in the light of the cultural practices and norms, as converging series of judgements about actions. They are general precisely because we bring our judgments in line with one another, e.g. by practical responses like continuing or breaking off cooperation, by mutually criticizing and correcting mistakes, by rejecting objections, by resolving misunderstandings, by introducing new paradigms of an action-type, and, of course, by teaching and learning. In doing so, we confirm and acknowledge these action-types and their norms and bring them into force. The correctness of an action, its identity and its norms depend on this process of forming joint practical knowledge.\textsuperscript{10}

\textsuperscript{9} A deeper analysis of the notion of action-types can be given in the framework of an inferentialist semantic, which offers an adequate approach to material concepts and inferences. For an elaborated inferentialist approach to the notion of material concepts and inferences see Brandom, 1994 and Stekeler-Weithofer, 2000.

\textsuperscript{10} Due to the mentioned mode of existence of action-types, the relation between an individual act, i.e. a token, and an action-type is not a simple relation between set and element, but of another logical structure. In fact, it is a normative relation that is based on our acknowledgement of acts as actualizations of action-types. Usually, a token has to fulfil the particular conditions of correctness and appropriateness of a type in order to count as a token of that type. But actions can fail. Nevertheless the act can fall under the respective action-type, because a type tolerates various exceptions and deviations, and sometimes, paradoxically, it even permits typical exceptions. So, under certain circumstances throwing a dice can be a method of rational decision, although the standard case of rationality is deliberation (see Kannetzky, 2000, p. 313). Therefore, types can only be determined by generic sentences, they describe the normal case and address ‘family-resemblances’ (cf. Wittgenstein, 1963, §§65ff.) rather than a fixed set of predicates that settle the conditions of assigning the type. Such sentences, which are explications (and at the same time standardizations) of tacit, ‘empractical’ knowledge (see Bühler, 1934, pp. 156-159 and passim) or of a ‘knowing how’ (Ryle, 1949, chapter 2), allow the objects falling under the type in question to deviate from the type to some degree. Therefore, sentences about action-types are ceteris-paribus sentences.
However, it is not necessary to achieve a complete accord among the members of a community, but only an accord that is sufficient for social coordination and cooperation. Note that the dependence of action-types on collective judgement and reason does not mean that we are free to acknowledge or reject their norms as we like, because judgements are bound to traditions and institutions that, for us as cultural beings, are as objective as the physical world.

In order to sharpen the nature of action-types, let me compare the concept of action-type with one of its apparent relatives. For a psychologist the (umbrella-) term ‘behavioural strategy’ may sound more familiar than ‘action-type’. The concept of behavioural strategy covers, at least prima facie and from a descriptive point of view, animal as well as human behaviour and their patterns. However, despite the similarities there are crucial differences, especially with respect to normativity: action-types are intrinsically normative, whereas behavioural strategies are not. Both can be regarded as patterns of problem solving. But action-types are solutions that have a moment of arbitrariness or conventionality, so that they need to be collectively stabilized and acknowledged by a certain community. They follow norms of correctness and appropriateness and give guidelines of ‘dos and don’ts’. Therefore, the fulfillment-conditions of action-types are more complex than those of behavioural strategies. In particular, action-types cannot be described in terms of mere (instrumental) functionality.\footnote{This holds for the intentions of an actor, the content of which is just the actualization or fulfillment of an action-type, too. Therefore, the normative and social dimension of action-types prevents the definition of full-fledged intentionality by mere goal- or object-directedness or by mere functionality (see section 4).} Hence, the realization of a goal, particularly the fulfillment of a need, is only one criterion of the fulfillment of action-types amongst others, and not even a necessary one. One consequence is that the feeling of being satisfied with the result of an action is not enough to meet its fulfillment-conditions. A closely connected consequence is this: carrying out an action-type is always subjected to public evaluation, at least potentially and at least imaginatively. The reason is that the difference between having done something, or better: having performed an action of a certain type, and believing that one has done it, cannot be decided from a merely individual point of view (cf. Wittgenstein, 1963, §§198–202), but depends on social evaluation. A child may believe, for example, that she is invisible.

Unlike an action-type, a behavioural strategy directly aims at satisfying a need. Its only fulfillment-condition is to achieve a goal, or better: to satisfy a need, e.g. to get food. It is fulfilled if the need is felt to be satisfied; and, conversely, the feeling of satisfaction normally completes the process. There are no additional dimensions and perspectives for judgement. Though repeatable, a behavioural strategy is as such a ‘one-dimensional’, purely individual way of behaving. Whether
other individuals behave the same way or not does not belong to its nature. For this reason, behavioural strategies lack the dimension of normativity. They cannot be right or wrong in a normative sense. An ape’s behaviour, for example, may be unsuccessful or mistaken in the sense that he misses a goal. However, the notion of correctness, incorrectness or error is not applicable to animal behaviour, since we understand it as dispositional or ‘triggered’, though the triggering-conditions may be much more complex than, for example, that of a spider’s prey-scheme, and though these conditions may include references to conspecifics and the anticipation of their prospective behaviour.

In contrast, the normative dimension of correctness and appropriateness, viz. the possibility of failing in various ways (i.e. failing not only by missing goals) is not only meaningful, but also constitutive for actions. It is impossible to learn first how to do something, and then, how to do it correctly. I stress this point, because normativity has often been regarded as a derived characteristic that only concerns the external or social aspect of action like social acceptance or the change of social status, especially the redistribution of commitments and entitlements. But normativity is inherent in action-types, and it also affects the dimension of instrumentality. It sets standards of objectivity and the framework of instrumental correctness. From a certain point of development, the cultural stance, which is manifested in action-types, determines the factual, the instrumental, and even the objective constraints of doing and thinking. Normativity is an essential part of our objectivity—and this is not a question of, more or less arbitrary, subjective belief (or expectation) as suggested by Searle, when he considers belief as fundamental to collective status functions (Searle, 1995, chapter 2). 12

An example may illustrate this point. With respect to mere physiological functionality and the fulfilment of elementary needs, we probably could live on a diet of chunks ripped out of cadavers. However, this would not count as performing an action of the type ‘eating something’ or ‘having a meal’ at all, even not under purely instrumental aspects. The criteria of functional or instrumental rightness and of normative correctness of an action-type melt together into an inseparable amalgam. So, the dimension of normativity reaches down to the most elemental perceptions and basic emotions like disgust. Other indicators for the inseparability of functionality and normativity in action-types are technical standards and professional codes. The dimension of normativity passes through all areas of human activity, and it is specific to human agency. The adoption of action-types, therefore, necessarily embraces the adoption of a normative and reflexive stance, i.e. a mode

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12 Though Searle’s formula ‘X counts as Y in C’ (Searle, 1995, p. 28) indeed characterizes the core of normativity, his explication of the crucial ‘count as’ by individual or collective beliefs is mistaken. The notion of belief rather conceals the complex structure of faith in, or hope of, the other’s cooperativeness before the background of common forms of praxis and their institutions.
What Makes Cultural Heredity Unique?

of behaviour particular to human beings, which transcends singular actions. This is a pivotal point, because it shows that cultural transmission cannot be achieved by mere emulation learning, and it raises some questions concerning the imitation-model of cultural heredity as will be shown below.

4. The Nexus between Action-types and Intentionality

Let me sketch now the conceptual link between action-types and possible intentions. This is important for understanding cultural transmission, because the notion of intention is at the heart of the concept of imitation.

Intentionality is usually regarded as a kind of ‘directedness’ or tendency of living beings that explains activity by giving a cause or a reason for behaviour or action. Davidson, for example, subsumes the whole variety of possible motives (for behaviour and action respectively) under the concept of ‘pro-attitude’, which is defined as a mental state of the individual directed to the satisfaction of needs in the widest possible sense and covers the whole range from natural needs up to moral attitudes (cf. the initial definition of ‘pro-attitude’ in Davidson, 1980). Such definitions of intention comply with naturalistic approaches to human nature by regarding reasons as causes.

The problem of ‘pro-attitude’-based and similar definitions of intention is that they reduce the difference between a ‘driven’ behaviour, say, of a worm moving towards the dark, and a planned action to a mere gradual one. Therefore, such wide definitions of intention neglect important differences like the characteristics of human action mentioned above, especially that it can fail in various ways. That is, they miss the cultural dimension of action and intention, their normativity. The reason for this confusion is that the naturalistic/individualistic approach to intention mix up two questions: on the one hand the question concerning the bearer of intention—and this is the individual; on the other hand the question concerning the content of possible intentions—and that is bound to and determined by collectively shared action-types within the framework of common practice.

With regard to their specific content, intentions are part of collectively shared action-types and institutions. The content and the fulfilment-conditions of intentions depend, as part of the actualization of action-types, on the content and the fulfilment-conditions of the action-type in question. Conversely, action-types are connected with certain generic intentions. This connection is the basis for the attribution of intentions. What someone intends is normally indicated by what she

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13 Herder (1772) accurately named the unique quality of this relation ‘prudence’ (Besonnenheit), i.e. a distant, objectifying, and restrained manner of behaviour that enables the actor to govern his impulses and the situation instead of being governed by them. ‘Prudence’ does not necessarily characterize the single action, but the general modus or kind of human behaviour.
is doing. This is not a denial of the existence of ‘internal states and processes’, but I would explain intentionality and the particular content of intentions with reference to common action-types and practices, that is, as generic intentions the individual intentions rest upon. So, concerning its determination, intentionality is not a matter of the individual psyche, and to have an intention is not merely a state of the individual mind; but both of them depend essentially on collectively shared practices, joint attribution, control and articulation. The reason is, in short, that without reference to common action-types, intentions as mere subjective states (e.g. pro-attitudes) could not be identified or distinguished from each other, because subjective mental states cannot serve as a tertium comparationis. ‘Private’ intentions would be under-determined (or lack definition). But if the intention is not sufficiently determined, that is, if it is not associated with the collectively controlled fulfilment-conditions of an action-type, it could not provide for the explanation or the understanding of an action, and the notion of error would be empty. If my subjective belief or the feeling of satisfaction is the only criterion for the success of my actions, then there is no criterion at all. I could not make any mistake, there would not be any difference between ‘doing X’ and ‘believing that I am doing X’. However, intentions rationalize actions, and the possibility of error substantially belongs to the notion of action. Hence the reductive explication of intention on the basis of animal directedness necessarily misses the nature (i.e. the differentia specifica) of human action.

Therefore, I propose regarding the notion of action-type as an adequate conceptual framework for approaching human intentionality and for drawing a categorial line between the intentionality of action and the (more or less ‘naturally given’, ‘drive-like’) directedness of behaviour, respectively, between human and animal activity. In contrast to the definition of intentionality by mere directedness of intrinsic mental states or by inborn dispositions, it seems more reasonable to define intentionality and intention as the manifestation of personal competences within the framework of social practice, that is, by the mastery of action-types,

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14 This claim can be argued along the lines of Wittgenstein’s Private Language Argument, which is basically an action theoretical argument as proposed by Kannetzky, 2005, 2007.

15 An explicit counter-position is usually held by naturalist approaches to intentionality, for example by Dretske, who claims that there are only gradual differences (Dretske, 1995), or Searle (Searle, 1983), who—like many others—declares intentionality to be a natural function of the brain. Non-naturalist positions are exemplified by Gehlen, 1964; Anscombe, 1957; Wright, 1971, chapter 3; Bratman’s planning theory of intention (Bratman, 1987, 1999) and are supported by externalist arguments like that of Putnam, 1975 and Burge, 1979, 1988. See also Stekeler-Weithofer, 2005. In my opinion, an approach that defines the concept of intention too broadly deprives this concept of its substance and distinguishing power, because then, in the end, any manifestation of (animal) life has to be regarded as intentional. Then, the ascription of intentionality does not make a difference any more. A unifying or integrating approach to intentionality, like that of Zeedyk, 1996, seems to risk broadening the concept of intentionality to a degree that levels important differences. This might prevent us from asking interesting questions, for example, whether non-intentional, drive-like behaviour changes its character due to its integration within an intentional environment.
including the ability to occupy institutional social roles and to take part in collective practices. The possibility of having intentions and beliefs presupposes—in categorial contrast to animal drive and discrimination—the adoption of a knowing how, that is, the participation in normative practice including joint control, evaluation and, to some degree, also explication of actions. In this sense intentions are cooperatively constituted and cannot be regarded as mere dispositional or mental states of individuals that can be stated like physical properties—having an intention is not properly described by a monadic predication, i.e. as a simple fact, but as a normative relation between actions-types and agents as members of a community of agents, which realize, evaluate, control, define, change and settle actions as actions of that type.

From this point of view, intentionality is a part of our ‘second nature’, that is, of culture, which is per se a collective enterprise. Of course, intentions would be impossible without the background of general dispositions that humans share with animal life. However, the former get their specificity as a result of the adoption of cultural, normative practices and the associated action-types. Action-types and the related (generic) intentions exist only in our joint practice of intending, realizing, evaluating and controlling the success of actions as belonging to a certain type, in our joint practice of norm setting, norm acceptance and norm realization. They belong per se to the realm of cooperation and cannot be explicated in terms of individual cognition and agency. Rather individual agency, intentionality and cognition should, conversely, be explicated in terms of social practices; it is not up to the individual alone to evaluate her action as successful or well done. The individual has a vote, but not the last one. The point is, that although the individual is normally able to judge her actions with respect to their fulfilment conditions, these criteria are always bound to collectively constituted and stabilised standards, as shown above. Thus, the individual’s ability to intend and evaluate her actions is derived from the existence and the acceptance of common action-types and their norms.

So, intentions and beliefs are important parts of patterns of publicly comprehensible and controllable actions qua actualizations of action-types, be they individual or collective ones. As such they can be identified or, more precisely, attributed to the actor. With regard to their content, such attributions occupy an ambiguous position. Their descriptive content results from normative commitment. An act $x$ counts as action of the type $X$ with corresponding (generic) intentions, if the agents jointly commit themselves to this description and its normative consequences (e.g. a redistribution of rights and obligations, taking responsibility, accepting sanctions etc.) in the light of the norms and criteria of their common practice. In this sense, the intentions of the individual are public in principle, because they belong to the understanding of typical actions within the framework of common practice. Outside of this framework the notion of intention would not have any function; it would be meaningless. Hence, the topology of possible intentions follows the topology of possible actions, that is, the topology of action-types and cultural practice.
Therefore, we attribute intentionality to beings that act the way we do, that is, to beings that share some action-types or practices with us, or, more generally, to beings whose behaviour cannot be described without reference to joint action-types, normativity and collective control of success. In a sense the attribution of intentionality to someone means adopting a participant’s perspective on her actions, that is, appreciating the agent in question as a person and taking a normative point of view, that comprises not only singular events and activities, but the form of her life as a whole. Due to the holistic character of action-types and intentionality, a particular attribution of intentionality to particular pieces of behaviour seems implausible. The question is, particularly with respect to the attribution of intentionality to animals, whether such attributions remain episodic, or whether it is necessary to describe the whole form of life as intentional. The latter would mean to speak of a culture.

Analogous considerations hold for the question of identification with conspecifics, because identification is mediated by understanding the other’s intentions. Hence identification with an agent is inevitably bound to the perspective of a participant of her practices, that is, it rests on the common ground of shared action-types. This holds also for the self-attribution of intentions, in the end for self-consciousness as well, which is not a knowledge of my inner states that are accessible only to me, but a knowledge of my position within the socio-cultural space of action-types, practices, institutional roles, social status etc.

5. Mechanisms and Preconditions of Imitation

After introducing action-types as the ‘cultural entities’ that are the objects of cultural transmission and after discussing the conceptual nexus between action-types and possible intentions, I will now consider cultural transmission from a different angle, namely from that of the ‘target’ of cultural transmission, that is, from the perspective of children that have to adopt action-types as parts of cultural practices.

The capacity to imitate has been stressed as one foundation of the specificity and rapidity of human cultural evolution. It is imitation that makes possible the cultural accumulation of individually acquired abilities, and the so-called ‘cumulative cultural evolution’ including the ‘ratchet-effect’ (cf. Tomasello, 1999, p. 5). But

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16 Of course there are overattributions to any moving or operating thing, and it seems that we tend to attribute pro-attitudes to anything. At least adults, however, usually ‘anthropomorphize’ only in a metaphorical sense and rather in an unserious or abbreviated manner. As mentioned above, a serious attribution of intentionality has practical consequences with respect to the normative status of the agent, e.g. his responsibility for his actions. Here, the overattribution is quickly at an end: It is simply childish to yell at the cat for knocking over the vase; and it indicates that a person, who seriously uses intentional vocabulary in a situation like this, does not yet master the normative practice of attributing intentions and normative status.
how can this central mechanism of cultural evolution be explicated? And what is it based on? According to Michael Tomasello, a promising way of explicating imitative learning is to regard it as learning by simulation (cf. Tomasello, 1999, pp. 70ff., 175ff.). In rough outline, the infant observes the actions of an adult, grasps her intentions by identification and attempts to reproduce the intentional actions of the other, in contrast to mimicking mere bodily movements. Intentional understanding enables the infant to interpret actions of adults as guided by goals and performed by means and procedures, and so to copy and adopt goal-directed behavioural strategies.

In order to understand the specificity of imitative learning, it might be useful to contrast it with another kind of social learning, namely learning by emulation. According to Tomasello, there is a crucial difference between learning from the other and learning through the other (cf. Tomasello, 1999, p. 6). This is exactly the difference between learning by emulation and learning by simulation/imitation. Imitation reproduces behavioural strategies of an actor; emulation reproduces demonstrator-caused changes in the external world in a more or less idiosyncratic manner. The difference is clearly illustrated by comparing forms of social learning in apes and humans (Tomasello, 1999, pp. 29ff. and passim). Apes as well as humans learn from others by emulation, whereas simulation and imitation is uniquely human. In emulative learning, the individual learns something about objects by observing manipulations with them. As a result, the individual may create her own idiosyncratic strategy to cause similar effects, ignoring the demonstrated behaviour itself. The behaviour of others is only an occasion for finding out something new by oneself. In contrast, imitation as such is not creative. This is shown by the fact that children, in contrast to apes, imitate effective as well as ineffective behaviour, if it seems to be intentional and thereby offers an opportunity for the child to identify with the demonstrator (Gergely, Bekkering and Király, 2002). Children imitate the demonstrator rather than the demonstration, ignoring the effectiveness of the observed behaviour. One could say that the social learning of apes is centred on objects and their changes, that of children on persons and their actions.

At first, imitative learning does not seem to be very effective. What could be the advantage of adopting right and wrong, efficient as well as inefficient behaviour? From an evolutionary point of view, wouldn’t the creation of one’s own functional strategies be much more beneficial? The answer is ‘no’, because only imitation enables us to draw benefits from the knowledge and skills of others, even if we adopt wrong or inefficient strategies in particular cases, and even if imitation seems to lack any creativity. To benefit from using the wheel, one does not need to re-invent it each time. That is why the advantages of imitation outweight its imperfections. Further, imitative learning, in contrast to emulative learning, leads to the adoption of behavioural patterns and skills, relatively unchained from their immediate instrumental effects on particular objects or situations (Gergely, Bekkering and Király, 2002; see also Meltzoff, 1988, 2005 for the imitation of novel acts like ‘head-touch’). This increases the scope both for possible actions and for their actualization in different situations. In particular, this includes symbolic representation.
and language, and generally any kind of conventional behaviour, all of which are essential constituents of community and culture. And it permits the adoption of ‘basic acts’ that, although they are important elements of more complex action-types, do not have a meaningful, or at least an immediate, effect on their own.

But what is the basis of this ability? Imitative learning is assumed to rest on a seemingly simple mechanism, namely that of identification, ‘a single human cognitive adaptation … that made possible an evolutionary new set of processes’, ‘the uniqueness from which all else flows, as it enables infants to exploit a novel source of information about other persons: the analogy to the self’ (Tomasello, 1999, pp. 209, 212). This uniquely human biological capacity—‘the truly momentous leap in human social cognition’ (Tomasello and Rakoczy, 2003, p. 122)—is brought into play at one year of age. Together with understanding oneself as an intentional being, the ability of identification enables humans to understand their conspecifics as intentional and decision-making beings and to take the other’s perspective. The rough structure of imitation can be articulated by the following, admittedly very simplified, consideration: ‘I want what you want, so I do what you do’. Imitation is therefore nothing other than understanding the intentional structure of others’ behaviour as an instrumental structure with means and ends, and then applying this structure for similar goals with similar means in similar situations. The core of imitative learning is the interpretation of what others do in order to figure out why they do so. While interpreting, that is, ascribing intentions to behaviour and taking the others’ perspective on things, the child is assumed to learn the normative stance and conclusion skills as well: what seems to work well, what is a thing good for, what kind of tool is effective, when is an action appropriate, what consequences are to be avoided and which ones are unavoidable etc. In a sense, imitative learning is the ability to classify the actions of others and one’s own actions as ‘the same’ with respect to the defining elements of action-types: customs, patterns, means, ends (intentions), and the evaluation of the situation.

### 6. Can Imitation do the Work?

Now it is hoped we can form a clear image of cultural transmission. Its objects are action-types, its mechanism is imitation as it has just been explained. But there are logical reasons for thinking that these two components do not fit together.

Identification in this sense is clearly a case of ‘mind-reading’. However, I do not understand how this ability could work at all, if regarded as an individual cognitive capacity that flows through the genes and is, therefore, in itself not in need of (social) learning. For such a genetic capacity had to respond even to purely conventional cultural settings that, at least partially, determine the content of possible intentions. Therefore, ‘mind-reading’ or the recognition of others’ intentions should be considered rather as a socially defined and learnt practical competence to participate in common practices than as an individual cognitive capacity, be it conceptualized according to theory-theory or according to simulation-theory of mind.
Starting with its prerequisites, a first problem with the notion of imitation is the presupposition of a kind of self-consciousness of the infant, which lies behind the notion of ‘understanding oneself as an intentional being’. This self-concept is fundamental for imitative learning because it defines the Archimedean point for the recognition of self-other-equalities, that is, of identification. But how can an infant obtain the necessary self-concept, if the discovery of self-other-equalities as well as self-awareness itself is not a mysterious, naturally given kind of awareness but a product of socialization and enculturation? Even an elementary self-concept (or its possibility) is the result of the interaction with others (cf. Mead, 1934; Tomasello, 1999, pp. 89f.), especially their evaluations and corrections of the self’s actions. It depends on taking an outsider’s perspective on one’s own doings, on the ability to perceive oneself as one participant among others (cf. Tomasello, 1999, pp. 196, 91, 97). So understanding oneself as intentional being is interrelated with the ability to adopt action-types, social roles etc., that is, it grows with the ability to take part in common practices. If the arguments given above for the social nature of intentions are valid, neither being intentional nor having a self-concept as an intentional being can be the starting point of cultural transmission, rather they are products of social learning. The same holds true for the notion of ‘understanding conspecifics as intentional beings’. If having an intention is not a somehow naturally given, biologically determined individual mental state, but a social (and socially learned) competence of acting and taking over social roles, then ‘understanding someone as an intentional being’ means nothing other than sharing common practices, including their normative content.

A similar difficulty is that imitative learning presupposes not only identification in the sense of self-other-equality, but also the recognition of other similarities of actions, that is, of means and ends as well as of situations. Otherwise there could be no generalizations of the behavioural patterns learned by imitation, that is, the adopted behavioural strategies could not be applied to anything other than the original situation. However, as indicated by the considerations about action-types and intentions, it is not clear at all how resemblances or identities could be identified independently of a collective practice of settling and judging similarities and differences (with respect to given distinguishing features, circumstances and

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18 It may seem that I presuppose what I try to show here, because the discussion is just about the (methodological) primacy of the individual or the community. However, as shown above (section 2), a notion of intention that can specify individual actions depends on the notion of action-type. The latter is a concept that is defined for collectives of individuals, not for individuals. Even if one does not accept this account, the general problem remains, that there cannot be only one ‘self’ as implied by a ‘biological’ definition of the self (e.g. the ‘ecological self’ that humans share with primates and that concerns the body and its sensory-motor actions, cf. Tomasello, 1999, pp. 60f). Even the concepts of ‘proto-intention’, ‘proto-understanding’ etc. cannot solve the logical or conceptual problem of how a single individual can adopt normative practices without the help and the appreciations of the participants of these practices. Therefore, even Tomasello’s levelled concept of self and self-consciousness suffers from the individualist starting point and contains a conceptual break between the initial (proto) and the advanced states.
possible aims). Or the other way around: the child cannot figure out, which elements of a situation are irrelevant for an action-type, because she does not yet participate in the collective practice of settling and applying relevant standards of similarity and difference. But an action-type that is not indifferent to irrelevant factors is not an action-type; it lacks the flexibility and generality that makes it possible to achieve one goal by different actions and to describe actions in different ways, that is, with different intentions.

Moreover, the holistic embedding-problem remains. Many of the action-schemes a child learns get their meaning first and only in the context of more complex social practices. Therefore, the (generic) intention of these actions is derived from the meaning of practices that go beyond these particular actions. This means, that imitation as simulation cannot grasp the action in question, simply because there are no genuine intentions that can be recognized. To give some examples: holding a pen, drawing a line, carrying something from a to b normally do not follow genuine intentions of their own, but they ‘have an intention’ only as preparatory or accompanying moves of more complex actions. It seems that the holistic constitution of our practices and action-types prevents the adoption even of the simplest action-types by imitation. The imitation-theorist could answer that the corresponding intention could be the intention to do the things in the right manner. But the right manner exists only as a consequence of the behaviour’s integration into wider contexts; therefore, this answer does not explain anything. However, a child can learn these things. Consequently, either some (basic) kinds of action cannot be learned by imitation, or there are some factors of imitation that do not appear in modelling imitation as an infant’s individual activity viz. simulation centred on understanding intentions.

The main source of these difficulties with the simulation model of imitation seems to be a logical problem of the chicken-egg-type. According to the simulation model, imitative learning reproduces intentional behaviour. Hence, the demonstrator’s goal is assumed to be a central part of the imitator’s perception of the situation, i.e. the imitator is supposed to subdivide the action to be imitated into means and ends. But if we understand intentions only as a kind of natural disposition viz. goal- or object-directedness, then they are underspecified with respect to the demonstrators actions as actions, that is, with respect to their normative dimensions of correctness and appropriateness. So the identification of an action according to an action-type and the attribution of the appropriate (generic) intention fails. This is obvious in cases of conventional doings, but this holds for other cases as well, as shown above. Neither the instrumental structure of ‘doing x in order to do y’ nor the conventional structure of ‘doing y by doing x’, nor the associated dimension of normativity can be grasped from the standpoint of mere natural directedness that is fulfilled with the feeling of satisfaction.

For doing that, the child itself has to master the action-type in question, at least to some degree, because understanding a piece of behaviour as intentional, that is, as an action, presupposes understanding the action-type and the corresponding
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generic intentions.\footnote{So, in the end, the adoption of a reflective or external perspective of one’s own doings is essential for imitative learning. For it is the basis of both, the inference by analogy, that is, the interpretation of others’ behaviour as intentional, and the understanding of oneself as an intentional being.} But this should be the result of imitative learning and not its precondition. So there is a dilemma: if intention is regarded as a weak concept, i.e. as an innate or mere biologically determined concept, it cannot explain the identification of the others doings as normative and therefore intentional. But this is the basis for the identification of others as intentional beings, of their intentions as well as for dividing of their doings into means and ends. Hence imitation fails or cannot start at all. If intention, on the other hand, is regarded as a strong, socially or normatively determined concept, the explanation of cultural transmission by imitation is superfluous or circular.

These difficulties can be traced back to the concept of interpretation, which is the cognitive core of the concept of imitation. Interpretation works fine if a competent participant, say \( A \), of a joint practice attempts to figure out the intentions of another participant \( B \) regarding what \( B \) is doing. This is the normal case: we mutually understand our actions by our shared background of common action-types and its generic intentions and we interpret along the lines of this background by evaluating the success, the correctness and the appropriateness of the action in question. That is, we invest practical knowledge on common action-types and their features as hints for the proper description of the action and the associated (generic) intention. For example, usually one would not say that a man heats up a piece of iron when chopping a tree. Why not? We normally use other methods to heat up iron, or because iron that is (intentionally) heated usually has a shape that is different from a saw, or because this man works in a sawmill and has other tasks to do than heating up iron in an odd manner etc. However, these answers refer to normative statements about common action-types and the corresponding generic intentions.

In case of language, this is obvious: interpretation as a kind of translation requires knowledge of the ‘target-language’ as well as of the rules of translation. An interpreter who does not speak a language into which he can translate, and who has no idea how to use a dictionary, would be a sad character. The point is, that interpretation cannot produce meaning but presupposes it (cf. Dummett, 1975).

The same holds true for the interpretation of observable behaviour as an action of a certain type, that is, as an intentional action. Every interpretation is in need of some fixed points of reference. If I know the intention of a person and attribute to her some competence with regard to our common practices, I can normally decide what kind of action she performs—a person indicating the intention to buy some food probably won’t go to the library. Conversely, if I observe typical behaviour, I can normally infer the intention—a person going into a bakery usually wants to buy some bakery products. The use of words like ‘usually’, ‘typically’, ‘normally’
etc. indicates the normative dimension of such descriptions and inferences. It indicates the investment of practical knowledge about customs and institutions, that is, about common action-types, their fulfilment-conditions, typical means, schemes, ends and the generic intentions belonging to them. The assumption that interpretation can produce such knowledge just misses this normative dimension of the description of actions.

Let us go back to the example of the man chopping wood. Without prior knowledge of customs and norms, and only on the basis of observation and understanding this man as an intentional being, one could figure out a whole bunch of possible goals and actions: maybe he simply wants to obtain wood, perhaps he is trying to heat up iron or to make funny noises, or he is attempting to communicate with another wood-chopper—we cannot know. Accordingly, mere interpretation cannot differentiate between the proper actualization of an action-type X, an unsuccessful attempt to do an action of the action-type Y, an inappropriate, but nevertheless correct performance of an action of the action-type Z etc. Without investing some normative knowledge about action-types for interpretation, any intention is compatible with any observable behaviour. 20

The problems of interpretation become more severe in cases of non-instrumental actions, because the model of interpretation is applicable only to instrumental action-types, that is, to actions with definite ends that are pursued by the person involved as her (generic) goal. But many of our actions, especially habitual actions, are functional or instrumental only in a loose sense. One might, for example, care for general and rather ‘loose’ ends like health, wealth, prestige or influence that can, as a matter of principle, not be achieved by one or another singular action at all, even not by series of singular actions of different types. Moreover, many of our basic action-types are far from being instrumental actions, not even in the mentioned weak sense. For example, think of communication that serves, maybe as a preparatory move for further (goal-directed) cooperation, the establishing, restoration or assurance of mutual understanding and common ground between the interacting persons.

But, is there a real problem concerning imitation and interpretation at all? It could be objected that imitation does not depend on interpretation, and, alternatively, it has been proposed to regard imitation as the basic phenomenon instead of intention and mind-reading capabilities (e.g. by Meltzoff and Moore, 1999; Meltzoff and Decety, 2003; Meltzoff, 2005). Although imitation, intentionality and the understanding of other minds are closely interrelated, the question is, whether intentionality and understanding intentions underlie imitation, as claimed by Tomasello, or, the other way round, whether innate capacities of imitation are the basis for a development that through social interaction leads to

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20 See Quine’s theses of the underdetermination or indeterminacy of the theory by the data, the inscrutability of reference, and the ontological relativity (cf. Quine, 1960, 1969).
intentionality and understanding other minds, as proposed by Meltzoff. The latter account seems to be indicated by evidence ‘that the observation and execution of human acts are innately coupled’ (Meltzoff, 2005, p. 56), i.e. for inborn mechanisms of imitation like the extensively discussed ‘mirror neurons’ (cf. Gallese et al., 1996; Gallese and Goldman, 1998) that are regarded as the basis of a common ‘ontology’ (‘shared manifold’, see Gallese, 2003) within a species, and that lead via the infant’s experience of regular connections between own acts and mental states to a mapping of self to others or a ‘like-me’-stance (cf. Meltzoff, 2005). 21 This kind of imitation, however, concerns essentially gestures and facial acts like tongue protrusion (Meltzoff, 2005, pp. 70f.).

In my opinion, the discussion seems to rest on an ambiguity of the word ‘imitation’. In one sense it denotes some, with respect to the adoption of cultural action-types ‘low-level’, biologically given capacities. At this level neither interpretation nor a self-concept nor intentionality in the culturally relevant sense comes into play. It seems that a sensorimotor or ‘ecological self’ (Neisser, 1988) fits the demands of these kind of imitation. The capacities of this ‘proto-imitation’ are probably necessary developmental preconditions for imitation in the second sense, i.e. the ‘higher-level’ intentional simulation of intentional behaviour and then of actions according to an action-type. This type of imitation is based on the ascription of intentionality, i.e. the interpretation of behaviour, and identification. Only this developed kind of imitation might serve as a medium of cultural transmission, because the objects of cultural heredity are action-types, not bodily movements and gestures. The latter become significant only in the context of the former. 22 However, if imitative learning is defined as an individual cognitive activity that begins at the age between nine and twelve months and can essentially be explained in terms of the one-year-olds’ cognition (‘Nine-Month-Revolution’, cf. Tomasello, 1999, chapter 3 and passim; Tomasello and Rakoczy, 2003, pp. 125f., the latter paper stresses also the infant’s capacity to take part in shared attention and activity), it cannot do its work—just because it presupposes the ability to ascribe intentions to some extend, an ability that implies some practical knowledge of action-types. So, this model is at least incomplete.

21 A general problem of this account seems to be a non-circular answer to the question of how to determine the notion of ‘mental state’, if it should be more than a set of firing neurons. How shall it be explained independently from the unit of intentionality and action-types? And if ‘mental state’ is meant without the connotation of ‘intentional state’, how to proceed to intentionality?

22 Alternatively, it might be as well that neural mirroring is a manifestation of (socially) adopted mind-reading abilities on a neural level, i.e. a neural correlate of the experiences with conspecifics, rather than a neural capacity of immediate mind reading. The question about what is the cause and what the effect cannot be answered, for logical reasons, by reference to these neurophysiologic findings.
Let me summarize. It seems that there is a dilemma of imitation as mechanism of cultural heredity. If we, on the one hand and as proposed above, understand the cultural competence to actualize action-types as the basis of intentionality, that is, if we regard intentions as subjective correlates of intersubjectively determined cultural action-types, then it seems that imitation would be a circular explanation of cultural transmission, because the ability to identify with others already requires a participant’s point of view. On the other hand, if the ability to imitate is conceptualized as a naturally given, biologically determined capacity, it cannot explain the core of cultural transmission, namely the transmission of something normative. Hence, neither an inborn capacity to imitate bodily movements, nor a mere individual ability of ‘mind-reading’ can be a sufficient basis for imitative learning as mechanism of cultural inheritance, because it could not grasp the crucial dimension of normativity due to its cooperative constitution.

So serious questions concerning imitation as the main mechanism of human social learning remain: do identification and imitation have biological sources only? And if not, are we to assume other or additional mechanisms of cultural transmission? Should we redefine the notion of imitation? These are the questions to be answered in the last part of this paper. It seems as if the preconditions of imitative learning such as the ability to identify with others and to set up self-other-equalities, a self-concept as an intentional being as well as imitation are themselves products of enculturation and socialization, that is, of social learning.

7. Imitation as Cooperative Activity

Let me discuss this point with the help of an analogy, the ‘sender-receiver-model of communication’ by Shannon and Weaver (1949). The model contains six elements: (1) a source, for example the speaker’s mind, (2) an encoder, say the speaker’s language skills, (3) a message, the spoken words (4) a channel, the sound-waves (5) a decoder, the listener’s comprehension skills and (6) a receiver, the listener’s mind.

The model can be applied to the interpretation of actions as well as to imitative learning according to the simulation model. The agent’s intention is the source, his strategy to achieve his goal is the encoder, the real action is the message, the observation is the channel, the observer’s interpretative skills are the decoder and the observer is the receiver. If all things work, the observer can recognize the agent’s intention by observing his actions, and as an imitative learner, he grasps the agent’s strategy.

What can go wrong with communication according to the model? First, there may be ‘noise sources’ that contaminate the message. A reliable countermeasure is redundancy, the complete or partial repetition of the message. Repetition may be the mother of wisdom, but it cannot solve the problem of
how the receiver can distinguish noise from the message, a problem that is similar to that of the infant who has to interpret her observations of others’ behaviour in order to reproduce it as action of an action-type X and its norms and rules.23

In order to solve the noise-problem, feedback was introduced into the model. Feedback alters the emitted messages in virtue of relevant responses, and so minimises misinterpretation, though some always remains. For the problem of imitation this means that imitation has to be completed by feedback mechanisms in order to give the children as ‘receivers’ of cultural transmission the hints that are necessary for the proper decoding respectively interpretation of behaviour along the common normative lines as well as for the right projection of the adopted action-types to new situations.

Another, more basic part of the noise-problem is the question of how to adjust the transmission-channel. Sender and receiver have to use the same channel; otherwise there is no transmission at all. Analogously, the child’s decoder has to be in tune with the channel of the adults for cultural transmission. This problem is often ignored, or even taken for granted, insofar as the capacity to identify with others is treated as a biologically given capacity that flows through the genes. Michael Tomasello would probably say that the channel is adjusted by a biologically caused qualitative jump in the cognitive development between the ages of nine and twelve months.

There is an alternative interpretation of the the cognitive skills of infants. It could be, that it is not only one-year-old-cognition that enables the children to take part in joint intentional activities, but, conversely, that cooperative activities of a special kind bring about one-year-old-cognition, especially the non-instrumental joint activities between infants and adults like ‘turn-taking’, arousing attention with attractive stimuli, baby-talk, hiding and showing things as well as such ‘low-level-cooperative’ activities as feeding and cleaning the baby. Therefore, I would say that the adjustment of the child’s channel itself is a cooperative, cultural task. We need feedback-loops in order to adjust the child’s channel and to make the decoder use the same code as the encoder. This is indicated by recent studies, which show that one-year-olds’ mind-reading capacities (which toy is new for an adult, which is not) significantly depend on the established joint engagement of infant and adult (see Moll, Carpenter and Tomasello, under revision; Moll et al., in press; Moll and Tomasello, in press). So, the dilemma of imitation as mentioned above (section 6) can be solved, if the social, or better, cooperative, character of imitation itself is recognized.

Now, the social character of human behaviour is hardly in dispute, and stressing it seems a platitude—but a platitude that is often not properly appreciated, and not properly explained. Affirming the social character of human

23 A vivid exploration of the noise problem is given in Stanislaw Lem’s novel His Master’s Voice.
behaviour is not properly appreciated, if it is regarded either as a specific human, but nevertheless mere biologically given prerequisite, or as ‘additional’ or ‘external’ attribute of human mind and behaviour, which, in their substance, are individualistically determined (cf. Kannetzky, 2007). As a mere biologically given prerequisite it misses the normative dimension of human doings. As an additional trait it overlooks the fact that human actions are intrinsically normative because of their fulfilment conditions. Such actions do not call on additional norms, which pre-exist, but norms, which are constitutive of actions, that is, which make a doing a certain determined action in the first place. So emphasising specific human, but nevertheless biologically given prerequisites of human action and cultural heredity is only emphasising a necessary but not sufficient condition.

Of course, the child has to be receptive. This is indeed a biological prerequisite—one cannot teach a chair how to dance. As has often been stated, even our biologically closest relatives, the great apes, do not become members of human culture, even if they grow up with humans. This points to particular, biologically given preconditions for cultural transmission. Although this is more a conjecture than an answer, I would say, all things considered, that the biological prerequisites which enable human beings’ imitative learning are exactly the same as those which enable them to act intentionally (in contrast to mere behaviour or triggered response). Whatever the particular nature of these prerequisites might otherwise be, they enable and support social interaction and cooperation on a cognitive, emotive and motivational level. Groundbreaking research in recent decades has shown a special adaptation of human beings to social interaction and shared attention. Let note here just some results. It seems even the foetus becomes ‘familiar’ with her mother’s voice (Fifer and Moon, 1995). Neonates selectively look at face-schemes (Fantz, 1963) and prefer not to be alone (Trevarthen, 1977). Infants can discriminate living beings from inanimate things (Brazelton et al., 1974; Legerstee et al., 1987). As mentioned above, ‘neural mirroring’ brings about (proto-)imitation (Meltzoff and Decety, 2003). However, mirroring on a neural level was found first in macaque monkeys (Gallese et al., 1996), so it cannot explain cultural heredity.

Beyond these common properties of primates there are some properties that are apparently specific to humans. On the one hand, human beings are particularly susceptible to, and aim at, social interaction even in the earliest stages of ontogeny. It has been shown that neonates take part in a kind of ‘proto-conversation’, which supposedly indicates pre-linguistic ‘primary intersubjectivity’ between infant and caregiver. This turns to ‘secondary intersubjectivity’ by shared attention and the interaction with external objects (Trevarthen, 1977, 1980). This seems to be specific to human infants (cf. Tomasello, in press); no other animal points to objects in order to share them with others. Trevarthen sees behind those elementary forms of cooperation a biologically given capacity of intersubjectivity at work. However, I believe this view is overstated, because it neglects the fact that at least one participant in those interactions, namely the
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Caregiver, is already a subject, i.e. a person who has mastered the demands of cooperation and intersubjectivity. Alternatively, it might be as well that the adults’ attention and engagement is provoked by the scheme of childlike characteristics (‘Kindchenschema’), the crying, the ‘social smiling’ of infants etc., so that the initial contribution of the infant to interaction might be overestimated, that of the adult underestimated. A caregiver is needed in order to evolve the infant’s cooperativeness. As far as I know, there is no similar interaction between infants and their peers, at least no interaction that could replace the interaction with a caregiver. Be that as it may, Trevarthen’s results clearly show the importance of social interaction for the development of mind, self, and a ‘theory of mind’.

This view is supported by Hobson, who stresses the importance of emotional connectedness for the growth of any social interaction or social learning. Hobson claims that the initial stage of infants’ mind-reading capacity and their social learning would be better described as that of perceiving ‘attitudes’ rather than as the recognition of ‘intentions’ and goal-directed behaviour (Hobson, 1994). I agree with him on this point. Though action-types and their norms cannot be transmitted by emotional connection and attunement alone (because emotions lack determination with respect to particular norms and rules of action-types), emotions are crucial as the basis of identification and normativity, i.e. as the starting point of ‘me-other-mapping’ and the emergence of the self out of interaction, i.e. as ‘cause’ of others’ emotional attitudes, that is, as the caregiver’s starting point for interaction.

As mentioned above, these prerequisites alone do not suffice to explain cultural transmission. Though they support social learning on a lower level, they lack determination with respect to the normative specification of action-types. This determination can only be given by members of a group who have already mastered the practices that are to be transmitted to the next generation, i.e. by caregivers who are active participants in the praxis in question. So ‘mirroring’, for example, might convey the infant’s self-perception and support her in practicing elemental bodily movements; emotional binding might bring about a self-identification on an emotional level as prerequisites of imitation in a full sense. Nevertheless, mirroring, primary intersubjectivity as well as emotional connectedness as such miss the point of imitation as mechanism of cultural transmission. For imitation in the relevant sense aims at the normatively correct reproduction of actions according to an action-type. In contrast, neural mirroring is mirroring of bodily movements, not of meaning or sense. Gestures and facial acts as such lacks the normative dimension that is essential for action-types, i.e. the objects of cultural heredity.

24 A similar omission can be found in Davidson’s model of triangulation (Davidson, 1989, 1991), which attempts to explain the constitution of a shared space of objects. It neglects to state that the mastery of joint attention and of object categories on the adults’ side is a necessary precondition for the constitution of the shared space.
The same holds analogously for emotional relatedness. To put it in a nutshell: the above-mentioned biological mechanisms are necessary but not sufficient for social learning and cultural transmission. They are important for cultural transmission only when integrated into, or transformed into elements of, human practice as a substantially cooperative enterprise.

To stay with the communication-analogy, one can say that nature provides us with a certain frequency range. But it is our cooperative task to adjust accurately the frequency of the child. The infant cannot solve this task by herself; she needs the help that is instruction, stimulation and challenge from the adults (see Kaye, 1982; Schaffer, 1989). The point is not only that the biologically given cognitive abilities of the infant will become stunted without cultural input. They will not evolve at all without the input at the right time, as shown by Kaspar-Hauser-examples (Lane, 1976). Cultural transmission is therefore an active cultural duty of adults, which is manifested and institutionalised in highly normative action-types and practices of social learning far beyond animal care for offspring. And that means that cultural transmission can be interrupted, when adults do not take up this responsibility. (In this way, morality comes into anthropology.) Therefore, cultural transmission is not properly described as an ‘extended’ natural process, which, given a suitable cultural niche, only completes biological or genetic transmission.

I draw two conclusions from this analysis. First, the one-year-olds’ ability to understand intentions and to identify with adults has a culturally formed ontogenetic prehistory. Or to put it in another way: the skills that enable the infant to enter the phase of imitative learning are themselves at least partly a product of cultural transmission. I do not deny the crucial role of biological prerequisites as described by Trevarthen, Meltzoff, Hobson, Tomasello and others. However, inborn biological capacities alone, which are always capacities of an individual, are necessary, but not sufficient for explaining the intrinsically social and normative dimension of imitative learning. To use my analogy: in order to find the transmission-channel the child needs initial feedback and support. Imitative learning as vehicle of cultural heredity is in itself a social praxis to be adopted by the infant.

The second conclusion is that imitative learning, even if established, is in need of completion, because it aims not at the simple reproduction of behaviour, but at the proper reproduction of an action, or, better, the capacity to instantiate action-types. There is a permanent need of feedback in order to solve the noise-problem, even if the channel is adjusted. In particular, the relationship between, on the one hand, imitative learning, and, on the other hand active instruction, joint control and cooperation should be revised, giving active instruction etc. not only an equal status with respect to cultural heredity, but, in addition, seeing it as an inseparable part of imitative learning itself. Let me sharpen the point. Of course, Tomasello

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25 Incidentally, this is of methodological importance, too: Approaches that focus on infants cognition and activity as explanatory base might, just for this reason, be at risk to miss the point of cultural heredity, namely that cultural transmission in itself is an intrinsically cultural task.
too, following many psychologists, stresses in several places the importance of active instruction in cultural transmission (cf. Tomasello, 1999, pp. 79f. and passim). However, he seems to regard imitative learning and active instruction as different and logically independent sources of cultural transmission (cf. Tomasello, 1999, pp. 34, 39 and passim), which are factually interrelated, but not conceptually or intrinsically. In contrast, I claim that both imitation and instruction constitute the inseparable cooperative unit of human social learning.

As explained above, action-types cannot be adopted by imitation, if imitation is understood as individual cognitive activity, because the control of its success, correctness and appropriateness is in principle a collective task—imitation is not only ‘doing the same’, but above all it is doing it correctly. This also holds for human social learning itself. A crucial difference between animal and human social learning is that the latter includes social control of success, which helps to prevent obvious mistakes in the realization of actions and to stabilize human practices in this way. So social control of the success of learning by the adults is an essential part of the cultural transmission itself. The central criterion of this evaluation is the child’s ability to succeed repeatedly, and to reproduce on demand actions of the respective action-type. This criterion controls the ability to act according to the rules and to apply them to new and different situations. It ensures that an initial success does not rest on pure luck or coincidence, but on mastering the action-type in its generality. In the end, the process of adopting an action-type is not finished until the learner himself is able to act as an instructor or trainer who can pass on the action-type to others. (Note that to act as an ‘instructor’ does not necessarily mean that the person involved can fully describe the action in question and explicate its norms in all details. Usually it is enough to recognize errors and to correct them in this or that way. It is a remarkable fact, that apes, who grew up among humans and who have adopted some pieces of goal-directed, action-type-like behaviour from their human caregivers, as far as I know, are not able to teach their conspecifics these strategies, i.e. to act as an instructor.)

In this context pretend play will also occupy another theoretical role: it does not necessarily indicate a kind of representation of others’ minds and the mastery of derived normativity, but the mastery of basic skills of cooperation and the ability to apply action-schemes to other than the usual situations, that is, the ability to generalize action-types. At the same time, pretend play deploys these skills and gives the adults the opportunity to correct the child’s mistakes under quite different conditions. Conversely, the child, acting as an ‘instructor’, can correct the (pretended) mistakes of the adults. However, imitative learning described in this way is essentially a non-instrumental cooperative process instead of a merely individual activity of the child.

The main point is that humans integrate the (initially) more or less animal-like behaviour of their infants into meaningful cooperative actions. For example, adults mirror the movements of their babies, they speak with them as if they could understand and they attempt to induce joint attention. And, perhaps the most important thing, they deal with infants and respond to their behaviour as if they
were (already) intentional and mental agents or persons. Parents often invent suitable links between the more or less unintentional behaviour of their infants and common action-types. One might comment on, e.g., arbitrarily digging sand as if it were building a nice castle. We give our infants normative advance on their prospective status as persons. We acknowledge the infant as intentional being, even if she is not yet able to have intentions at all or in a full sense. By cooperating and communicating with the infant, by intervening in her actions, by commenting on her behaviour, by correcting, criticizing and instructing the infant as if she were a full participant in our cultural practices, the infant will be drawn into the human community, its practices and the joint control of success. Though perhaps overstated, it could be said that the child can scarcely avoid being integrated in cooperative actions and practices in one or another of these ways. For in getting involved with them, adults give the infant the ‘hints’ necessary for interpretation (qua intention ascription) and imitation, and also for further success in the adoption of cultural practices. The child is corrected or sometimes criticized if she is mistaken, and she is praised for success. She is subjected to similar criteria of critique and correction as other persons. In contrast, a dog is, more or less subtly, negatively or positively, sanctioned, not corrected or criticized. This is, in the end, the categorial difference between drawing someone into the space of reasons, that is, bringing about a kind of insight into rules and criteria of correctness and appropriateness, and conditioning a kind of behaviour.

I want to finish with two proposals. First, though imitation has been widely acknowledged as a kind of social learning, it seems that the term ‘social’ is used too narrowly here, because above all it is used to denote the social nature of the objects of social learning, say the action-types and the practices to be adopted by the learner, but not the process of adoption itself. In contrast, I think it characterizes not only the objects of social learning, but also the practice of imitative learning itself. Imitation can do its work, if it is embedded in contexts of cooperative action and if it is associated with, or completed by, several kinds of active instruction. Both, imitative learning and instruction rest on our mutual practical recognition as intentional agents, i.e. as persons, and on the joint controls of success, not only of the adopted actions forms, but also of the process of learning itself. Looking at it the other way round: imitative learning and active instruction are not two different types of social learning, which only accidentally coincide in human cultural

26 In a sense this illustrates, why the standpoint of morality as defined by Kant and which goes beyond mere normativity, is inherent to culture: ‘So act as to treat humanity, whether in your own person or in another, always as an end, and never as only a means’ (Kant, 1785, BA 66/67). At least for cultural transmission this seems to be a necessary condition.

27 The developmental psychologist who explores the cognitive capacities of infants of several ages by ingeniously designed tests gets ‘snapshots’ of these capacities. However, these snapshots as such do not show the general conditions for these capacities to evolve. This abstraction may lead to a naturalistic interpretation of the cognitive performances of human infants as results of innate cognitive capacities.
transmission and may or may not complement each other, but they are like the two inseparable sides of one coin.

Second, the unique human capacity for identification, which enables imitative learning, is itself at least partly a product of non-instrumental cooperation. In the end, the main mechanism of cultural transmission, imitation, and its subjective prerequisites, ‘mind-reading’ capabilities and the capacity of identification, are themselves cultural transmitted products, and, according to the constraint of cultural transmission mentioned at the beginning of this paper—culture is what can be transmitted by cultural transmission—they are essentially cultural products, although with biological preconditions. Tomasello (1999, p. 13) chooses a sentence of G. H. Mead as a motto: ‘But there is nothing odd about the product of a given process contributing to, or even becoming an essential factor in, the further development of that process’. With respect to human cultural evolution and cultural heredity, this is true of the mechanism of identification and imitative learning itself.

8. Summary

The objects of cultural transmission are action-types, which can be determined by generic sentences concerning relevant characteristics and fulfilment conditions that acts of the respective type normally have. Action-types determine guidelines of the rightness and appropriateness of actions, and exist as generic, normative, ideal and culturally holistic forms in our collective practice of judgment (qua practical evaluation) and cooperation. They are intrinsically social and normative. They define the space of possible intentions and determine their content. Now imitative learning as a kind of simulation presupposes the understanding of intentions; that means, it aims at generic action-types. But actions-types are not determined by a set of singular actions; hence, they are not accessible via observation and interpretation of others’ activities, as proposed by the simulation theory. Therefore, if action-types are the objects of cultural transmission, and if imitation is regarded as the key-process of cultural transmission, imitation itself must be construed as a social and normative process. Hence, imitation is incomplete without active instruction by persons who already master the respective action-types, and the constitution of the capacity of the foundation of imitation, namely identification, is a cooperative task. Therefore, learning by imitation and its cognitive prerequisites—identification with, and understanding of, other persons as intentional agents—are not only the main form of cultural transmission, they are themselves cultural, cooperative forms institutionalised in the cultural practices of teaching and learning. The foundation of cultural transmission is itself a product of culture. It is not a biologically defined cognitive mechanism.

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References


