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Wittgenstein and Tomasello on understanding intentions

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Abstract Developmental psychologists have argued for the view that understanding one's own intentions and the intentions of others consists in the performance of a psychological mechanism and moreover that the ability to understand intentions depends on the ontogenetic development of this mechanism. In this paper, I refer to Michael Tomasello as the most notable proponent of this view and present arguments against it. I argue that understanding intentions results from social agreement in practice rather than from psychological processes transpiring in the minds of intentional agents. In my defence, I will appeal to the later Wittgenstein, who expounds the view I proffer here. First, I shall expose the key differences in each of their views, particularly in terms of how the ability to understand intentions is related to language acquisition. In the second section, I employ an argument from Wittgenstein's *Philosophical Investigations* to reject the claim that children in their first year of life develop an understanding of intentions ontogenetically. Finally, in the third section I argue that the understanding of an intention requires the ability to form an intention autonomously. In the process of forming an intention, the child creates its own understanding, namely one that is socially accepted if it is in agreement with established usage, customs, and institutions as part of everyday practice. On the basis of this view, I suggest that understanding intentions depends on the agreement of behaviour in certain practical contexts rather than as the accordance of mental states with a psychological mechanism.

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For almost three decades, theories in developmental psychology have attempted to explain how children succeed in understanding the intentions of others. The vast majority of psychological theories claim that understanding intentions consists in running a psychological mechanism, even though these theories exhibit caution with respect to the details of how this alleged mechanism achieves the feat of understanding. In this paper, I present arguments against these claims and argue, to the contrary, that understanding intentions results from *social agreement in practice* rather than from psychological processes transpiring in the minds of intentional agents. In so doing, I shall refer to Michael Tomasello as the most notable proponent of the claim that understanding intentions is part of a psychological mechanism. In my defence, I will appeal to the later Wittgenstein, who expounds the view I proffer here.

In his published work, Tomasello has routinely and explicitly demonstrated his sympathy for the philosophy of the later Wittgenstein, and in particular for his ideas regarding language acquisition. However, in the first section of this paper I shall expose the key differences in each of their views, particularly in terms of how the ability to understand intentions is related to language acquisition. Most important in this regard is Tomasello's claim that children in their first year of life develop an understanding of intentions *ontogenetically*, that is, based on their own intentional behaviour. In a much simpler theoretical framework, the idea that children are endowed with an understanding of intentions is already present in Augustine's *Confessions*. There, Augustine endorses the claim that children learn the meaning of a word by means of ostensive definition, which requires them to understand that something is intended in order to be taught ostensively. In the second section, I employ an argument from Wittgenstein's *Philosophical Investigations* to reject this claim, as well as the general idea that pre-linguistic children could know about their own intentions or the intentions of others.

Against this argument, one might offer a causal theory of understanding intentions. I show that Wittgenstein rejects this alternative. Nevertheless, he argues that, in preparation for the ability to understand intentions, the child is involved in causal processes that are at work when the child is trained in the meaning of words. In the third section, I argue that although the meaning of words is first learnt owing to the effects of training, this approach does not endorse a causal theory of understanding intentions. Whereas training merely requires the child's causal responses to the intentions of the trainer, the understanding of an intention requires the ability *to form an intention autonomously*. In the process of forming an intention, the child creates its own understanding, namely one that is socially accepted if it is in agreement with established usage, customs, and institutions as part of everyday practice. On the basis of this view, I suggest that understanding intentions is most profitably conceived of as depending on the agreement of behaviour in certain practical contexts rather than as the accordance of mental states with a psychological mechanism.

1. Tomasello on infants' understanding of intentional behaviour

In his first published monograph, *First verbs – A case study of early grammatical development*, Michael Tomasello presents the analysis of one child's early language development under the rubric of Cognitive Linguistics (Tomasello 1992a). His approach is thought of as a notable alternative to formal theories in linguistics that have dominated the field since the 1960s, such as Chomsky's Transformational Generative Grammar (cf. Chomsky 1957, 1965), and subsequent theories of "learnability"[1]. Owing to their level of abstraction, Tomasello takes those theories as inappropriate for the analysis of early language and instead endorses a new and upcoming view in Cognitive Linguistics. This view holds that languages should be conceived of «as cultural products that embody in basic ways both the cognition of which they are composed and the social communicative ends that they have evolved to serve» (Tomasello 1992a: 2), rather than being construed as formal theories. Interestingly enough, in this book, Tomasello compares the move from Generative Grammar to Cognitive Linguistics with Wittgenstein's move from his earlier to his later philosophy of language.

In his subsequent papers and monographs, Tomasello routinely points out the significance of Wittgenstein's later philosophy for the theoretical framework of

[1] Cf. e.g., Lightfood 1989, Pinker 1984.

developmental psychology. In fact, Wittgenstein's ideas began to influence Tomasello's research around that time. In the same year that *First Verbs* appeared, he also published a paper on the social bases of language acquisition. To that end, he emphasised that «language is social behaviour», which could be «acquired only through social interaction with other human beings», thereby requiring for its acquisition «specific skills» pertaining to social learning (see Tomasello 1992b: 67). It was then in a paper published with his colleagues Kruger and Ratner in the following year that he presented a revised account as an attempt to understand those specific skills of social learning. As the authors emphasised, they aimed to present an understanding:

> in terms of the most recent research and theory on children's social cognition. We believe that as children's understanding of other persons develops – as they learn to understand other persons in terms of their intentions and beliefs, or even in terms of a "theory of mind" – new processes of social learning emerge (Tomasello *et al.* 1993: 496).

Moreover, in a seminal paper published in 1995, Tomasello then endeavoured to elaborate on this new understanding under the rubric of "joint attention". Central to his view was the idea that social learning and social cognition requires that the child enters into a joint attentional interaction with the adult. He claims that

> in order to understand what an adult is attending to when he or she looks at, reacts to, or behaves toward an entity in the environment, and thus to enter into a joint attentional interaction with him or her, infants must understand something of the adult's intentions in the situation (Tomasello 1995: 104).

What enables children to enter into a joint attentional interaction with adults, Tomasello argues, is their native understanding of other persons as intentional agents. On the basis of this view, he aims to offer a theory of the psychological mechanisms that can explain the ontogenetic development that leads to infants' early ability for joint attention. Here, I shall not go into detail about his approach. Still, it is worth keeping in mind that Tomasello divides child development into different stages. He points out that, in the period prior to 9 months of age, infants do not engage with adults in joint attention of any kind. In the 9- to 12-month period, however, he claims that infants begin following and directing the attention and behaviour of others. Following Piaget, who locates intentionality in the infant's removal of obstacles at around 9 months of age (cf. Piaget 1936), Tomasello by contrast holds that the key to the infants' understanding of the behaviour of persons as intentional is that:

> late in the first year of life infants for the first time differentiate in their *own* behavior between the ends and means of instrumental acts; that is they begin to behave intentionally (Tomasello 1995: 121, original emphasis).

According to this view, the means and ends of instrumental acts are distinguished and determined in the infants' behaviour. Nonetheless, proponents of this view have overlooked the important point that the distinction between ends and means is *conceptual* rather than behavioural. Saying this I am not intending to reject Tomasellos's view upfront but rather express the major worry that motivates this paper. Although competent language users may speculate about the intentions that are expressed in other agents' behaviour, the agent must be able to specify his intentions verbally in order to express them knowingly – or so I will argue. Intentions, it seems, cannot be specified before one has learnt how to express intentions knowingly. The ability to know how to

express one's own intentions verbally is a requirement for behaving intentionally. To understand the behaviour of others as specifically *intentional* behaviour requires the ability to understand and use the vocabulary of intention. Such requirements ought to be heeded for the following reason: without them we are not able to distinguish between intentional behaviour, on the one hand, and mere causal behaviour, which does not imply the agents' intentions, on the other. Behaviour alone appears to be ambiguous in this regard and thus cannot provide a sufficient criterion for specifying intentions and for differentiating between ends and means.
Furthermore, in many cases the use of our ordinary language mirrors this ambiguity when behaviour is interpreted as intentional. For example, when the word 'purpose' is used in order to describe behaviour, our language masks the difference between intentions and effects of the behaviour. Wittgenstein pointed out this ambiguity on various occasions:

> The word "purpose" like all the words of our language is used in various more or less related ways. I will mention two characteristic games. We might say that the purpose of doing something is what the person doing it would say if asked what its purpose was. On the other hand if we say that the hen clucks in order to call her chicks together *we infer this purpose from the effect of the clucking* (Wittgenstein 1969: 68-69, my emphasis).

> One says, "The cock calls the hens by crowing" – but isn't all this already based on a comparison with our language? — Don't we see all this quite differently if we imagine the crowing to set the hens in motion by some kind of physical causation? (PI: §493.)

Wittgenstein recognises that intentional vocabulary can be used to describe behaviour that is merely causal. Nevertheless, he points out that in order to accomplish this one has to know how the relevant vocabulary is used. For example, when someone says that the hen has the intention to call her chicks together, the understanding of the hen's intention, which is expressed in the description of her behaviour, requires knowledge about how the word 'intention' is used. According to Wittgenstein, someone is able to understand intentions only when he knows how to talk about them. By contrast, Tomasello thinks that this understanding does not depend on the ability to use intentional vocabulary but that it is instead provided ontogenetically with the development of a psychological mechanism. Tomasello claims that at a certain point in his psychological development, an infant succeeds in understanding the adult's intentions. He moreover holds that the development of this psychological mechanism constitutes the necessary foundation for entering into a joint attentional interaction, and thereby to grasping the meaning of words by way of ostensive definition. Thus, contrary to Wittgenstein, Tomasello claims that the understanding of intentions is independent of the ability to use intentional vocabulary. As it happens, this claim can also be found in Augustine, an author that Wittgenstein was familiar with. In the following section, I will present an argument that Wittgenstein raises at the beginning of the *Philosophical Investigations* against the claim that is made by both Augustine and Tomasello. However, I shall discuss neither of the theories that might stand behind it.

2. Augustine on language acquisition

The *Philosophical Investigations* opens with a quotation from Augustine's *Confessions* where Augustine describes, at least to the best of his knowledge, how he learnt to use language. The quotation runs as follows:

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> When grown-ups named some object and at the same time turned towards it, I perceived this, and I grasped that the thing was signified by the sound they uttered, since they meant to point *it* out. This, however, I gathered from their gestures, the natural language of all peoples, the language that by means of facial expression and the play of eyes, of the movements of the limbs and the tone of voice, indicates the affections of the soul when it desires, or clings to, or rejects, or recoils from, something. In this way, little by little, I learnt to understand what things the words, which I heard uttered in their respective places in various sentences, signified. And once I got my tongue around these signs, I used them to express my wishes (Augustine, *Confessions,* I, 8)[2].

According to Augustine's description, he learnt to use language by way of grown-ups explaining to him the meaning of words via ostensive definition. He recognised that adults intended to point out *this* particular object by means of perceiving their gestures. This way of explaining the meaning of a word presupposed that Augustine knew that the adult's action was related to the intention of pointing at *this* particular object. Nevertheless, Augustine's description raises the question of how a child is able to understand the adult's intention while the adult explains to him the meaning of a word ostensively.

Augustine's answer to this question is that the child understands the intention to use a pointing gesture in order to indicate an object by means of perceptual experience. According to his description, the child is able to grasp that an object is signified by an uttered sound as a result of him perceiving grown-ups naming some object while turning towards it. Having perceived this phenomenon several times, he thereby understands how the gesture is used, i.e., he understands the intentions of others employing the gesture. This seems plausible if we assume that the pointing gesture is used exclusively in order to explain the meaning of a particular word, e.g., the word 'object'[3]. One can imagine that, having routinely witnessed the pointing at an object while hearing a word repeated, after a while the child understands that the pointing gesture is being used in order to point at objects. Or at least this is how it would seem.

However, what if we imagine that the adult changes his intention while still using the pointing gesture? Let us assume that when the adult points at objects he does not intend to explain the meaning of the word 'object' but the meaning, for instance, of the word 'two'. The child who has first learnt to use the word 'object' when the adult points at objects is not yet able to understand the new purpose of the pointing gesture. However, in order to correctly assume that the child can understand the adult's intention it must be presupposed that the child knows that the pointing gesture can be used with *different* intentions, i.e., in order to point at the object, or at the number of objects, at their colour, their shape, and so on. Thus, in order to understand that the pointing gesture is used to explain the word 'two', the child must already know that the adult is pointing out the number of objects. However, as Wittgenstein remarks, «this means»:

[2] As translated in PI, §1, original emphasis. Without further argument, I take it that what Augustine is describing here is a case of joint attention as Tomasello understands it.

[3] Ratner and Bruner (1978) have shown that children from the fifth until the ninth month of age become familiar with routines that are established in interaction with their caregivers. After the child adopts a slightly more active role, he begins to anticipate parts of the routine in the seventh month of age. During the ninth month, the child attempts for the first time to match his mother's utterance with a regularized one of his own, and thus an expanded pattern begins to emerge.

> that the word "number" must be explained before that ostensive definition can be understood. – The word "number" in the definition does indeed indicate this place – the post at which we station the word. And we can prevent misunderstandings by saying "This *colour* is called so-and-so", "This *length* is called so-and-so", and so on (PI: §29, original emphasis).

Augustine's description, however, neither involves the premise that words like 'number', 'colour', or 'length' were explained to the child *before* the ostensive definition – such that the child knows that the pointing gesture is used with different intentions. Nor does Augustine give any other explanation about how the child is capable of knowing this. He rather assumes that the child acquires the understanding of the adult's intention in using the pointing gesture by means of perceptual experience. Yet, as we have argued, it is impossible that perceptual experience provides the child *knowledge* of the adult's intention. Rather, Augustine seems to confuse the understanding of an intention with the child's mere reaction to the pointing gesture when it is used exclusively to explain the meaning of a particular word, e.g., the word 'object'. Arguably, as Wittgenstein points out, this is because Augustine does not countenance «any difference between kinds of words», but rather thinks «primarily of nouns like 'table', 'chair', 'bread', and of people's names, and only secondarily of the names of certain actions and properties» (PI: §1). However, in order to *understand* that the pointing gesture is used to point at objects, the child must already know the meaning of the word 'object' as differentiated from the meaning of other actions and properties. Thus, the confusion between merely reacting versus understanding arises because Augustine's description does not involve this premise. Finally, since the understanding of intentions requires the ability to master a language, Augustine must therefore assume either, as Wittgenstein points out, that the child «already had a language, only not this one» (PI: §32), or that the pre-linguistic child is unable to understand the adult's intention.

We have claimed that Augustine does not give another explanation regarding how the child could know what the intention of using the pointing gesture is. However, one might follow Augustine and argue that in order to know what the intention of using the pointing gesture is it is not required that the child already knows the meaning of words. Yet, this objection still raises the question of how one can know how the pointing gesture is intended. What does it mean to say that one intends to use the pointing gesture in a certain way? One way in which one might explain it is to say that a certain *feeling* accompanies the intention. For example, Bertrand Russell suggests that an intention, which is related to the function of a word, is causally connected to the intended action, and when the intended action occurs this gives the agent a feeling of "intendedness". If the agent has this feeling, and the intention proves appropriate to the action that occurs, then, according to Russell, the agent has reached the maximum of verification. Thus, the intention and the subsequent action are externally related to a third event, namely, the feeling of "intendedness", and altogether they verify the intention (cf. Russell 1921: 270)[4].

However, if we assume with Russell that the feeling verifies the intention then this assumption leads to the implausible conclusion that *whatever* causes the feeling would be verified as the intention. For example, when I have the intention to eat an apple because I am hungry and subsequently eat an apple, this causes a certain feeling in me (e.g., the satisfaction of hunger, a feeling of pleasure, etc.), thereby verifying that I actually had the intention to eat an apple. However, if I have the intention to eat an apple but

[4] Russell illustrates his «more external and causal view», referring to the relation of expectation to expected occurrence. Respectively, he speaks about the feeling of «expectedness».

someone punches me in the stomach, then the latter does not verify my intention just because it causes the cessation, or satisfaction, of my hunger (cf. PR: §22).
According to Russell, all that is needed for verification is that the intention and the subsequent action cause the same feeling. Yet, the causal theory ignores the fact that the intention does not have the same *multiplicity* as the event causing the feeling[5]. Another way of making the point is to argue that the causes of an intention leave the actual intention undetermined. For example, a chess player may have the definite intention of winning a game of chess, but his winning might be caused by events that do not belong to his intention whatsoever, e.g., the fact that his opponent does not show up on time[6]. Further examples to illustrate this point include the so-called *problem of wayward causal chains*, as raised by Davidson (see e.g. 2001: 79).
So, the feeling of intendedness can be caused in several ways that are different from what was actually intended. However, as Wittgenstein has emphasised in one of his lectures, the intention «can only be fulfilled by something definite» (Wittgenstein 1979: 9). This means that the intended action must be determined *before* the subsequent action happens. We would find it very odd indeed to say that when someone loses a game of chess that losing the game was his intended action. If, in fact, someone *intends* to lose in a game of chess then we should say instead that he did not have the intention of playing chess. The intention must be determined *before* the subsequent action happens: it cannot be determined *by* the subsequent action.
The external event in Russell's theory seems, moreover, to fall short as a criterion for comparison in another respect. If we assume that I have the feeling that is supposed to verify my intention, then the question arises as to whether the feeling that I have is the one that serves as a criterion. How can I recognise the feeling as *the one that is caused by* my intention? I certainly cannot compare it with the feeling that I *expected* to be the right one. For, in order to compare it with the expected feeling and decide whether the latter is the actual feeling that I have, a further external event would be necessary. On this basis, the question arises once again as to how I can recognise the feeling as the one that causes my expectation. This of course leads to an infinite regress.
Nevertheless, one might insist that every time the adult points at an object while repeating the word while the child is watching, then she has a characteristic experience of pointing. This motivates the claim that when someone is attending to an object's shape, colour, number, etc., this is identical with having the characteristic experience. Apart from the arguments that show the inconsistency of this claim, one can grant, however, that meaning and effect are indeed closely related to one another. The circumstances in which the child learns the meaning of a word, Wittgenstein argues, reveals this relation. In the *Big Typescript*, he remarks:

> One says to a child: "Stop, no more sugar!", and takes the sugar cube away from him. That's the way a child learns the meaning of the word "no".
> Had one said the same words while handing him a sugar cube, he would have learned to understand the word differently. In this way he has learned to use the word, but also to associate a particular feeling with it, to experience it in a particular way (Wittgenstein 2005: 34)[7].

[5] In this regard, as Engelmann points out, the picture of the causal theory «presents our language as if it had fewer options than it actually has» (2013: 73).

[6] Famously, this happened in the second game between Boris Spassky and Bobby Fischer during the finals of the world championships in Reykjavík, 1972.

[7] Wittgenstein understands the effect similar to the feeling that is described by William James. In general, he does not see a problem in describing both meaning and effect as 'meaning', but he emphasises that «we

The learning environment reveals that the understanding of a word is not only determined by the rule-governed use of a given language, but also by its effect. As we saw earlier, this is important especially because «an ostensive definition can be variously interpreted in *any* case» (PI: §29, original emphasis), and «the child cannot as yet *ask* what the name is» (PI: §6, original emphasis). Wittgenstein therefore proposes that the foundation of language acquisition is what he calls 'ostensive teaching', or 'training', rather than ostensive explanation.

3. Wittgenstein on understanding

The arguments that we have presented against Augustine's description of language acquisition lead to the following results. First, we have seen that, in order to understand the intention of using the pointing gesture, the child must already know that the gesture can be used with different intentions. Wittgenstein argues that this knowledge is the result of training together with a particular kind of instruction. Secondly, he argues that the effect of training is not to be conceived of as being identical with understanding an intention. It can be the effect of training that a child repeats the word 'object' when an adult points at various objects, but the child does not learn by means of training to understand the intention of using the pointing gesture. According to Wittgenstein, training does not cause the understanding of an intention. Nevertheless, being trained in the use of expressions is a requirement for understanding intentions.

How, then, should we understand how a child achieves the ability to understand an intention? In the *Philosophical Investigations*, Wittgenstein invites the reader to consider the following kind of language-game between two people, A and B, in order to explore this question:

> [W]hen A gives an order, B has to write down series of signs according to a certain formation rule.
> Let the first of these series be that of the natural numbers in the decimal system. — How does he come to understand this system? First of all, series of numbers are written down for him, and he is required to copy them. […] At first, perhaps, we guide his hand in writing out the series 0 to 9; but then the *possibility of communication* will depend on his going on to write it down by himself (PI: §143, original emphasis).

We can imagine that A is an adult and B is a child who is learning the series of natural numbers. Wittgenstein points out that, at first, the child is trained in writing out the series, 0 to 9, as the adult guides his hand. But then, as Wittgenstein emphasises, the possibility of communication will depend on the child going on to write the series down *by himself*. To be able to say that the child understands the order, Wittgenstein appears to claim, it is not sufficient that when he writes out the series from 0 to 9 this is only a reaction that is caused by training. For during the training, his action follows the intention of the trainer, i.e., he just does what the trainer wants him to do according to particular instructions. Understanding the adult's intention, however, requires that the child writes down the series *by himself*, i.e., that he forms his own intention relating to his writing down the series.

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must be aware that these are two completely different uses (meanings) of the word 'meaning'» (Wittgenstein 2005: 37).

As we saw in the first section, proponents of the claim that understanding intentions consists in the performance of a psychological mechanism can agree that in order to understand the adult's intention it is required that the child is able to form his own intentions. Moreover, they are interested in an answer to the respective questions of what the criteria are for saying: (i) that the behaviour is intentional, and (ii) that the intentional behaviour implies an understanding of others' intentions. In addressing these questions, those proponents think that those criteria can be found inside a person[8]. Following this thought, one might argue, for example, that the intention to write out the series requires certain knowledge and that this knowledge consists in a state of mind, at least to the extent that the mind is viewed as an apparatus (e.g., the brain). The child understands the adult's intention when his state of mind is in accordance with the adult's. On the basis of this picture, we may appeal to the apparatus in order to explain knowledge as its output.

It follows from this underlying picture that there are two criteria when speaking of knowledge as a state of mind, which may even serve as a preliminary answer to the two questions aforementioned: first, knowledge might be identified with the effects (i.e., the outputs) of the apparatus; second, we might say that a person has knowledge of another person when we know that their brain conforms with a certain neural configuration, i.e., when we learn the structure of the apparatus independently of what the apparatus does. Still, one might object that neither constitutes the criteria under which we ascribe knowledge to a person. For example, Gordon Baker and Peter Hacker have argued that:

> [e]ven if we knew the neural concomitants of knowing the alphabet or understanding the rule of a series, those neural configurations would not be what knowing or understanding consists in. Nor would their obtaining (as established by positron emission tomography or functional magnetic resonance imaging) be *criteria* of knowledge. The criteria for knowing or understanding are the behavioural manifestations alone (Baker & Hacker 2005: 323, original emphasis)[9].

The proponent of, what we might name, the inner criteria theory is inclined to think that understanding is a mental process, one which seems to be hidden behind exclamations such as: "Now I know!", "Now I can do it!", and "Now I understand!". Yet, as Wittgenstein points out, the mental event is something that occurs only momentarily, whereas we normally use those expressions for altogether different occurrences. If we think about the variety of possible occurrences then it becomes clear that there is no definite thing we can hold up as the criterion for using the word 'understanding'. On the basis of the picture that understanding is a *hidden* mental process, we are instead liable to think of such exclamations as being merely *symptomatic* of understanding, rather than taking them to constitute understanding itself. Still, as Wittgenstein argues, this picture is misguided:

[8] For example, Tomasello suggests that «it is children's knowledge of their own behavior – from the inside as it were – that is the impetus for new levels in their understanding of others» (1995: 122). He remains rather unspecific, however, regarding the form in which this inner knowledge is existent.

[9] The point is well illustrated in Schroeder (2001: 154): «Charles visited his ailing elderly uncle. […] Suppose we know Charles as a kind-hearted and altruistic person. Time and again he has gone out of his way to help others without gaining any personal advantage by it. And he has often left out opportunities of enriching himself even where that wouldn't have involved any dishonesty. […] Now, if a neurophysiological investigation brought to light that the passing through his uncle might bequeath him a substantial sum somehow triggered the action, would that establish that he acted for selfish reasons after all? No. […] The case has already been decided by the circumstances sketched above».

> Just for once, don't think of understanding as a 'mental process' at all! — For *that* is the way of talking which confuses you. Instead, ask yourself: in what sort of case, in what kind of circumstances, do we say "Now I know how to go on"? I mean, if the formula has occurred to me (PI: §154, original emphasis).

Taking into account the different occasions whereby someone might make exclamations like "Now I know!", "Now I can do it!", and "Now I understand!", Wittgenstein realises that the exclamations are not symptoms of a particular mental state, which we mistake for understanding. They rather belong to *particular circumstances* that justify someone in making those utterances (see also: PI: §§ 33, 35, 154-156). We know that the behaviour is intentional because we have learnt on various occasions to identify them as such, i.e., we have learnt that in a certain language we may call the behaviour under particular circumstances 'intentional'. According to Wittgenstein, the understanding of intentions is manifested in our behaviour and we know that someone understands an intention (e.g., the intention to write out the series from 0 to 9) if he behaves in a certain way in particular circumstances.

What answer can we give to the question about whether the intentional behaviour implies a correct understanding of others' intentions? We may describe the child's behaviour as an act that implies his understanding of the intention to write down the series of the natural numbers. Still, we only say that the child understands this intention if it is in accordance with the intention that he has formed on his own. In this regard, consider, for instance, Wittgenstein's example in which a child heeds the intention to execute the order "+ 2" and, as a result, writes: "1000, 1004, 1008, 1012" (cf. PI: §185). In this example, the child forms his own intention to execute the order "+ 2" but this intention is not in accordance with how we understand the order.

One is consequently inclined to say that the child has misunderstood the intention of the order and one might justify this judgment by pointing out an inner criterion for the understanding, e.g., a characteristic feeling or a hidden mental process[10]. However, Wittgenstein argues that the understanding does not rely on inner criteria but that the inconsistency of this claim rather shows that the very phenomenon is misconceived. Our understanding of intentional behaviour is not to be conceived of as the performance of a psychological mechanism according to inner criteria but rather as an agreement in social practices. Whether we agree with how the learner understands the order "+ 2", and their subsequent execution of this order, depends on how far the intention that he has formed is in agreement with our understanding, i.e., with the way we typically form intentions under those particular circumstances, that is to say, in our everyday practice. The child is trained in how to act according to particular instructions, owing to which he thereafter has to form intentions autonomously. Whether we in fact *understand* those formed intentions depends on how far they are in agreement with how we *ourselves* would form them in similar circumstances.

4. Conclusion

Tomasello and other developmental psychologists have argued for the view that understanding one's own intentions and the intentions of others consists in the performance of a psychological mechanism and moreover that the ability to understand intentions depends on the ontogenetic development of this mechanism. Against this view, we have argued that the ability to understand intentions depends instead on the

[10] Wittgenstein furthermore argues against the claim that the intention can be understood as an insight or intuition (cf. PI: §§186ff). Unfortunately, we cannot go into detail about this here.

ability to master the use of language as manifested in certain behaviours, in particular circumstances. Although mastering the use requires the existence of a psychological mechanism, we have argued that it is mistaken to claim that this mechanism provides the criterion for understanding intentions. Instead, we have presented arguments for the contrasting view that the criteria for understanding are provided by the interaction of intentional agents within shared practices. Intentions are formed autonomously based on the ability to master techniques in language and their understanding depends on how far they are in agreement with the techniques of interacting agents who form their intentions in similar circumstances. We concluded that intentions are neither to be conceived as the performance of a psychological mechanism, nor is the ability to understand them. On the contrary, we suggested that forming intentions is most profitably understood as a practice that is learnt and performed under the conditions of social interactions and that understanding intentions is the result of those interactions.

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