Exploring the Thinking Self – Performance and Persistence

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Abstract: This paper explores a rather specific and neglected part within the studies of thinking and the self: the self in thinking action. First, pure thinking action is defined as a thinking process dealing with pure conceptual relations with no explicit or implicit reference to sensory qualities. Second, this kind of action is explored to discover features of the self-performing activity. First-person methods are applied to reveal the phenomenology of such actions. By way of an example and using the method of phenomenal contrasts, the phenomenal material is sampled, analyzed, and further evaluated. We point to five dimensions of the thinking self and contrast them to some traditional concepts of the self, such as the minimal self or the narrative self, leading to important extensions of the literature. This leads up to another series of experiential results which finally allow us to unearth the "core self" immersed in thinking action. This "core self" reveals itself as the source of its thinking action and as the center of awareness.

Keywords: Self, phenomenology of thinking, mental activity, mental performance

Different aspects of the self have been extensively discussed in the psychological and philosophical literature under various methodological premises. Our current topic includes only a small albeit important segment within this field: the phenomenology of the actively thinking self, and the self in thinking action (Guillot, 2016; Jansen, 2016). However, agentive aspects of conceptual thinking action are not treated very often (Burge, 1998; Fiebich & Michael, 2015; Jansen, 2016; Jorba & Moran, 2016; Mylopoulos & Shepherd, 2020; O'Brien, 2007; O'Brien & Soteriou, 2009; Proust, 2009; Soteriou, 2005, 2013) and so, is the self in thinking action (Peacocke, 2007, 2009; Proust, 2009, 2013; Weger et al., 2016; Weger & Herbig, 2019; Wood, 2019). However, the self as something that acts in thinking, and executes a thinking action has found not much attention in the psychological literature either, with hardly any exceptions (one of the few is James, 1890).

We present an original study, a longitudinal case study where both authors executed several repeated observations over extended time intervals (for details, see below). Our contribution points to different experiential dimensions of the self within the field of conceptual thinking action and thus expands earlier research on the topic (Ziegler & Weger, 2018, 2019). In particular, we carry further our earlier investigation into thinking action (Ziegler & Weger, 2023) and do so with regard to the thinking self in general and the self within thinking action specifically.

Our approach is phenomenological in nature using the method of first-person observation as outlined in earlier papers (Weger et al., 2016, 2018a); as well as using the method of phenomenological contrasts applied earlier (e.g., Ziegler & Weger, 2023).[1] We are well aware of the difficulties and shortcomings of this method. And yet, given our subject, the self in thinking action, which is a first-person phenomenon, to begin with, we propose that we can add some important aspects to the theory of the self that are complementary to what one may gain through traditional third-person methods of research. Why is this the case? The self as an object (target) of cognition or thinking (see for example Kihlstrom et al., 2002) is not the self that cognizes or thinks; this distinction has been observed at least beginning with James (James, 1890). Hence, the self in thinking action can be grasped by third-person approaches in its external features, in its objectified processes. For its inner workings, and its performative nature as such, first-person methods can complement this understanding.

The thinking self is the prime example of bringing first-person research into action since it is something we *do* ourselves, it does not happen to us (like most other psychological phenomena). In our opinion, there is no

[1] For discussions of cognitive phenomenology in general and of first person methods and introspection in particular, we refer to: Bayne & Montague, 2011; Breyer & Gutland, 2016b; Gutland, 2018; Weger & Wagemann, 2015. – In particular we want to mention the paper Bitbol & Petitmengin, 2013, that discusses all issues and objections relevant to our approach. For more sceptical views, see for instance Carruthers, 2010; Chalmers, 2010; Dennett, 1998; Metzinger, 2009.

research method that might capture exactly what happens within our thinking self (namely taking the viewpoint of the person specifically involved in this action) other than a first-person method. Any kind of reflexive method that uses only the approach of an extrinsic observer (third-person method) seems inappropriate. Secondly, we emphasize the primacy of the theme/subject as opposed to the method. This means: that if there is a theme that we cannot explore with the conventional methods available, then the methods have to be adjusted; rather than insisting on the methods and instead abandoning the theme (the first- person experiential nature of the thinking self). In other words: we adapt our research method to the subject we are investigating (the thinking self) and not the other way around by fixing the third-person method as mandatory and then exploring, what might show up from this perspective.

The common approach to consciousness – and consequently to the conscious, thinking self – is to look for events that happen to it, thereby exposing the self; in short, this type of consciousness focuses on receptive events and not on performative actions. However, the self immersed in thinking action is not an event that happens to the self; rather, the self immersed in thinking action is initiated and pursued by the self – that is, by the very entity. In this respect, the action of the thinking self is not an *object* of research and hence no part of the conscious self mentioned above; however, it is a phenomenon of our overall consciousness, and as such the subject of our research; hence it needs to be included in our research on action consciousness. This is exactly what we want to achieve: To show explicitly that there *are* phenomenological approaches to what amounts to a consciousness of thinking actions. The method of third-person observation cannot account for this since such actions, *initiated by* the self (as opposed to merely happening *to* the self) are excluded by third-person observation in principle because such third-person methods look from outside, rather than inside. Such a third-person method would simply eliminate the thinking self as such from the field of examination. That is why we chose the first-person approach.

We are convinced that by referring to experiences with explicit experiments and the phenomenal contrasts below, the phenomenal character of the thinking self immersed in thinking action may be clearly exposed. Furthermore, on this basis, this thinking action can be presented as something very different from occurring thinking that happens to the self without doing it. In this respect, the experiences with these examples as well as with these contrasts serve the purpose of showing that the thinking self is not an unquestionable given but something that needs to be searched for if we want to become aware of its actions. This is why we delve explicitly and in somewhat more detail into many facets of the thinking self.

Given the fact that thinking plays an important role within the conscious life and that conceptual thinking actions might contribute important aspects to consciousness in general and to self-consciousness in particular (Guillot, 2016), exploring the self within this kind of thinking realm may lead one directly into the inner workings of the conscious self and thus to the very center of self-reliance and autonomy. Although we cannot delve deeper into the latter issues within this paper, we think that our research has far-reaching consequences for this subject matter, including personal freedom and self-transformation by overcoming prejudice and moral or epistemic stereotypes (Proust, 2009, p. 261; Bandura, 2004, 2006).

For this paper some prerequisites need to be taken into consideration: (1) The approach is a cognitive phenomenology from the first-person perspective. This is due to the fact that the object of consideration is the thinking self *in action* which as such cannot be examined from outside (third-person perspective). It needs an inside-observational (first-person) perspective. (2) The results and presentations of our experiences are organized in accordance with the examples discussed: systematic, structured, and condensed. Instead of using citations of reports, we packed the results into tables which made it much easier for the reader to grasp the essence. As in presenting mathematics, we eliminated redundancy and intermediate steps as appropriate for such a subject matter. (3) One needs to get familiar with the examples, and work through them several times – which poses the risk that one stays too close to the content; however, what matters in the end, is that one personally *performs an action* – which is the only way of revealing the thinking *self*. (4) What is more: we choose somewhat complicated mathematical examples that may appear unnecessarily demanding at first sight; however, we choose them for a specific reason: If the task is too easy, there is too much risk that the thinking process slips into automatic routines – which would be wholly counterproductive to our account of exploring the more subtle facets of active thinking. They need some effort, some involvement of the self that brings the self immersed in the thinking action up to our awareness. The complexity of the examples serves the purpose to of being able to arrive at an experience that at least reveals some aspects of the thinking process, namely the involvement of the thinking self as such. (5) The inner aspects of the thinking self in action may be elevated to a research subject if one uses the appropriate method that approaches it as a performative activity. This cannot be done outside a first-person approach, since this is the only method that suits the self in action. (6) We use established – though non-traditional – methods that were elaborated and presented in earlier papers from the same authors, including a paper in the *European Psychologist* (Ziegler & Weger, 2018, 2019, 2023).

In short, we proceed as follows: We begin by describing our experimental setting, namely the example we used to observe the thinking self as well as the detailed experimental method of sampling the experiential material. The following section "Results from the phenomenological analysis" gives a structured account of our findings and points to some challenges that may arise using first-person accounts. In the next section "Results and consequences" we carry our analysis further by extending the awareness into the very center of the thinking self, giving an account of what it entails to grasp this process while it happens. The results of this latter step are condensed in the seven theses concerning the nature of the thinking self. Stemming from our foregoing phenomenological analysis, however, these theses will be subjected to another test in the section which uses the method of "Phenomenal contrasts". This encompasses in fact an expansion of the phenomenological analysis recorded earlier in this paper, now focusing on the contrast between occurrent thinking and self-initiated thinking. This allows us eventually to bring the testing of our hypotheses to its settlement. In the final section "Consequences" before the discussion section proper, we propose five dimensions of the thinking self, summing up and organizing our results presented earlier accordingly into specific qualities of the thinking self, culminating in Table 2. Finally, the section "Discussion" provides a short overview of how some other prominent concepts of the self are related to our approach.

Method

Procedure, Material, and Participants: A Longitudinal Case Study of Thinking Action With an Example From Arithmetic

This paper's findings on the experience of the self are not commonly known or researched so far, at least they have hardly been addressed sufficiently. For this reason, we decided to use an exploratory rather than an explanatory approach. Our approach thus focuses on discovery rather than explanation or theory testing as it is common when new or not widely accepted areas or methods of research in science in general are tapped into (Hoyningen-Huene, 1987).

We think it is best to work out rigorous, unambiguous, and detailed examples as a basis for what we want to share. In our previous studies mathematical thought processes have proven particularly well suited for our purposes since they are intrinsically conceptual and take some effort to carry out. These conditions make them perfect examples to make us aware of the involvement of ourselves in our performative thinking actions that are at the center of our investigation, namely the self immersed in thinking actions. That they are somewhat difficult to perform is exactly what one needs here – namely a level of engagement (a) that goes beyond what one usually does while one thinks, (b) that cannot be grasped in a second or instantaneously, and (c) that cannot be conveyed or induced by trivial or more elementary examples found abundantly in the literature. Yes, one might get stuck in the process of just grasping the content and the structure of the mentioned arguments; however, we want to bring the reader (some repetitions and perseverance are needed here) to the experiential dimensions of the thinking self while going through these examples. In short: These examples need to be worked through by every individual self who is ready to delve into processes of thinking actions. As such they can lay the grounds within one's very own experience rather than merely theorizing about narratives of experiences unknown to oneself. We will first introduce the examples and then illustrate their implications for the theme under inquiry – the thinking self.

As mathematical objects to study we take the well-known *natural numbers* 1, 2, 3, 4, … etc., the concept of divisibility, and the prime numbers. From now on, 'number' always refers to a natural number as specified above. A number n is *divisible* by a number d, if and only if there is a number m such that $n = m \cdot d$, or $n/d = m$. If n is only divisible by $d = 1$, then n is called a *prime number*. We now want to show first that every number n is the product of finitely many prime numbers. (Note that the individual prime numbers forming the factors of such a product may reoccur: the prime number 2 for example occurs two times in $60 = 2 \cdot 2 \cdot 3 \cdot 5$.) To see this for any number n, take n to be divisible by d (if $d = 1$, nothing further has to be shown): $n = m \cdot d$. Then look for divisors of m and d. If they have none except 1, they are already prime numbers and the task is completed (because it was shown that n is a product of primes). If they have divisors, one continues the process until one finds only prime numbers as divisors (for example in the series $60 = 2 \cdot 30 = 2 \cdot 2 \cdot 15 = 2 \cdot 2 \cdot 3 \cdot 5$). Since n is a finite number and all divisors are smaller than n and hence finite too, one arrives in the end at a finite number of prime numbers $p_1, p_2, \ldots p_k$ (wherein the same prime number may reoccur) such that $n = p_1 \cdot p_2 \cdot \ldots \cdot p_k$ (with k being a natural number). In addition, one can show (but we will not do so here) that this prime-factoring of a number is unique (this is the prime factorization theorem): For every number n there is exactly one finite series of prime numbers $p_1, p_2, \ldots p_h$ (not necessarily distinct) such that $n = p_1 \cdot p_2 \cdot \ldots \cdot p_h$ (h being a natural number).

This and the following example may be hard work for the non-mathematically inclined reader. However, this is exactly what is needed in order to make the individual self engaged in thinking processes phenomenologically explicit. With easier, more common, or routine examples,

e.g., 2 + 5 = 7, $(a + b)^2 = a^2 + 2ab + b^2$ or $(a + b)(a - b) = a^2 - b^2$, the danger fallof falling into routine mental processes or mind-wandering – which are not thinking actions as we understand them – is much stronger. Therein lies also the reason why we did not choose a geometrical example this time which may distract the mind into visualizing something instead of pursuing pure conceptual thinking.

To take up the example again and carry it further, we want to show that there are infinitely many prime numbers. For this one needs an indirect proof that makes use of a contradiction resulting as a consequence of certain premises. Namely, the instruction here is: assume that there are only finitely many prime numbers, all explicitly known, say $p_1, p_2, \ldots, p_f$ (f being a natural number). Then take the number $g = p_1 \cdot p_2 \cdot \ldots \cdot p_f + 1$. Naturally, this number g is not divisible by any of the primes $p_1, p_2, \ldots, p_f$. This means that there is, for example, no number m such that $g = p_1 \cdot p_2 \cdot \ldots \cdot p_f + 1 = p_1 \cdot m$, since adding 1 to the product $p_1 \cdot p_2 \cdot \ldots \cdot p_f$ one explicitly rules out that $g = p_1 \cdot p_2 \cdot \ldots \cdot p_f + 1$ is divisible by p_1 (or by $p_2, \ldots, p_f$ for that matter). Hence, one has found in g an additional prime number (only divisible by 1), contrary to the assumption that only the numbers $p_1, p_2, \ldots p_f$ are prime numbers.

This is the contradiction one needs to establish that there are in fact *infinitely* many prime numbers, contrary to the foregoing assumption (that there are only finitely many prime numbers).

Both authors conducted the pure thinking actions involving the self as suggested by this example separately; the first author worked out the examples, went through these thinking experiences for a long time, and did them more than 40 times (each session takes 5–10 minutes). The second author followed his instructions and further explored the field on his own. We then compiled the results and evaluated them conceptually by reflecting on them. The first author wrote the draft of the manuscript and the second author revised it. Both authors have extensive experience in first-person/inner observation.

To be more specific: Both authors first merely thought through the example several times and having completed this process, reflected on it afterwards (see Ziegler & Weger, 2018). After several cycles of this process, we were increasingly able to notice the involvement of the self in thinking experiences during the performance of thinking actions. This includes the extension of awareness focused on the qualities of conceptual content, to begin with; and then on the performative experiences guided by the exploration of conceptual relations and finally the involvement of the thinking self as such. Later, these experiences (that is: the descriptions thereof) were collected and organized by both of us according to the noticed characteristics or qualities of experiencing pure concepts and thinking actions guided by the self. With these characteristics in mind, thinking actions involving the self were performed again and assessed against the former results. That is, we compared the former descriptions with the new ones. Where differences remained beyond confirmation, we adjusted and enhanced our descriptions by gaining new specifications from performing again an experience of thinking action. This was done several times until we reached an agreement on the main features of the qualities of the self, namely the self-involved in thinking action as outlined below. Our points of reference, or standards, for adjustments and correction, were always the direct experience we had from thinking actions, not just from any description of it.

Results

Results From the Phenomenological Analysis of the Thinking Action With the Example

The following phenomenological analysis is our preferred method to arrive at some specific results concerning the self in thinking action (this will later be complemented by a phenomenal contrast). The emphasis lies in the different kinds of involvement of the self within the thinking action, not so much in the qualities of these processes as such – important as they are. These latter qualities have been analyzed in detail elsewhere (Ziegler & Weger, 2018, 2019, 2023) and need not be repeated here other than in summarizing some crucial elements. The kind of productive or performative thinking action we are describing here can also be called active focused conceptual thinking action, and in the following will be called *pure thinking action*. The purity of this kind of thinking action (as has been spelled out in more detail in the above-mentioned papers) is due to its content (pure concepts, without direct or indirect reference to matters outside the thinking action, such as sensory qualities, feelings, propositional attitudes, etc.) and to its active presence. As will be pointed out later in this paper, this active presence is also not dependent on outside factors beyond the thinking agency, namely the thinking self.

There is another caveat in place before we start with the presentation of the results properly: there is no doubt that all oral or written *descriptions* of the thinking processes are retrospective, which is the very nature of scientific communication. But does this mean that the process of thinking action is nothing else than a retrospective process? As we see it, the experience of the thinking self as such is only possible *during* this thinking action and is an additional ingredient of our experience of the content of thinking. The description of all this is retrospective, naturally, but this

description points to an experiential process that is actively performed and part of our action consciousness. In other words: the description is retrospective, whereas the experience – which we wish to point the reader to in our approach – is simultaneous to the activity. – There is an analogy to this within the natural sciences: Any description of an experiment is retrospective by its very nature; however, this description points to a real process that needs to be reenacted or replicated if one wants to get acquainted with this process itself and not only with its verbal representation; that is if one looks for more than a description, namely for the direct experience of it. – In order to have a direct awareness of the original source of any description of the thinking processes, one has to reenact them every time one wants or needs to notice the experience one is having with it in an explicit fashion.

Given the precarious status of introspective findings, we apply some measures to control their possibly subjective character (Breyer & Gutland, 2016a; Ziegler & Weger, 2018). First of all, we seek to point to generalizable facts within the various experiential factors that may depend on cognitive abilities, education, habituation, previous knowledge, environment, etc. Second, we need to differentiate between (i) experiencing something in our own mind, (ii) noticing it as what it is, and then (iii) communicating it to others – particularly concerning how we have been able to become aware of such experiences (see, e.g., Depraz et al., 2003).

Our mathematical example serves to make clear at least two purposes of our study: (1) One is concerned with thinking actions geared at pure concepts and conceptual relations, and eventually predicates and propositions, without any explicit or implicit reference to sensory qualities and the like. (2) The universal character of mathematics – its methods as well as its contents – guarantees that one does not delude oneself into non-generalizable features.

Factors potentially impinging this generalizability include the nature or content of our example, the way we presented it, our skills to deal with it, and our unnoticed premises. All these potentially destructive factors concerning generalizability can be ruled out, however, by making one aware of personal perspectives, and then by dealing with them through varying them accordingly in order to generalize them so that it would also fit other situations.

We now wish to start with the nature or content of our example: Naturally, *we* presented what *we* like or see as important within mathematics; however, other examples work as well, which can be seen from our other papers or in those of other authors (e.g., Chudnoff, 2014, Ch. 2). Furthermore, our presentation and our premises could be varied by starting with *whole numbers* (natural numbers including 0 and negative numbers), making this business with divisibility and prime numbers slightly more complicated, or by giving a definition of natural numbers instead of just taking them for granted (the latter seems more natural outside a formal mathematical environment). Our example is certainly challenging, but nothing that cannot be achieved by everyone. What we present is elementary arithmetic and part of the kind of high school mathematics that probably most academics did master in the past.

Having said this, let us start with the phenomenological analysis, taking up the question of generalizability of the following observations later on.

The example must be accepted individually, although it might be initially suggested by others or on our own account or experience. As soon as one considers prime numbers, several things begin to present themselves in the mind: spontaneous mental representations of things related to prime numbers, memories of dealing with them (in school or somewhere else), bad or good feelings about arithmetic in particular, or mathematics in general. In order to start with a thinking action about prime numbers, one has to gather conceptual items featuring prime numbers among this whole experiential domain. One may even anticipate what one is going to do in a moment. As long as one stays in a passive or receptive mode, other things might pop up – eventually distracting the path of thought (Weger et al., 2018b). One has to gather oneself with the goal to presently think about the arithmetic of natural numbers and prime numbers, rather than looking only at what presents itself in the mind as a kind of mind-cinema. Given one can make this transition, that is, execute what one has set as a goal, keeping to it, trying to overcome difficulties, obstacles, or maybe even antipathy against arithmetic, one enters a very different realm, namely one of pure thinking or conceptual thinking action.

Before that, one might have experienced consciousness as the place or experiential space where all these things occur, including propositional attitudes (beliefs, feelings, desires, judgments, etc.); one owns these experiences in the sense that they happen to and within oneself, maybe even in the sense that one made them up sometime in the past. As these things happen now, it appears as if one were not directly responsible for them: One is the subject of things that happen now – it is not that one makes or induces them directly to occur. Thus, one has a sense of ownership – in the sense that one experiences them – but no sense of agency.

However: Within pure thinking actions, almost all of these changes: At first, the sense of self and the sense of agency disappear (or are at least diminished). One is totally immersed in *what* one is thinking. There seems to be no space to notice *how* one is thinking or *who* the thinking subject or agent is. The exploration of conceptual facts binds the active mind: prime numbers are experienced as what they are: nondivisible numbers constituting all other

numbers (prime factorization theorem), being not finite as a set. No belief in anything (or, for that matter, authority, former judgments, education, etc.) is necessary: every conceptual relation or argument based on the currently pondered mathematical conceptual content is transparent, lucid, and beyond doubt (of course only as long as one stays within this state of thinking action).

Sooner or later another transition, namely the one back to a sort of receptive mode. However, the receptive mode *after* the thinking action is very different from the one before the active period. This designates the turning point where one moves the awareness away from the thinking action that has just been performed and to the results and experiences, this action conveyed. The differences cannot be found in the contents one was just engaged with, but in the kind of presence of conceptual experiences and the awareness of how one has just done this thinking action (Ziegler & Weger, 2019, 2023).

To become aware of all this, one needs to make another transition, namely one away from merely noticing this experiential content during the thinking action. Now one needs to look beyond the conceptual content, in order to reflect on what can still be grasped from these past pre-reflective experiences that make up the substance of this immediate post-action period. It is as if one wakes up to first noticing *that* one has done all this thinking action and *how* one did it (in contrast to the solid consciousness of *what* one has done, namely thinking about concepts). One wakes up to a sense of agency and a sense of the performative structure of something just actioned. All results are before oneself and one knows immediately that this is the effect of the *own* thinking performance. One might be tired by the effort, but nevertheless excited about the results – or frustrated that one did not grasp all the details of the proof (that all numbers are products of primes) and/or that one did not find the proof that this product is unique (which we left out in our presentation of the example because it was too much for an introduction).

In contrast to the receptive mode preceding the thinking action adventure, one now knows much more than before the performative thinking period. Namely, one became aware of the episode of pure thinking action: The conscious mind is now richer, and enhanced with conceptual thinking experiences. Referring to the example above in the second section, one has enriched the previous experiences with prime numbers and their properties by running into a contradiction that awakened oneself to the insight that there are infinitely many prime numbers. As firmly as one knows that all of this was the performance by oneself, one knows that the results are only owned by oneself with respect to their presence, but not concerning their universal content (structure, essence). One is aware of this content and its universality, but one is also aware that one has not constructed or made it by any means oneself, one merely took note of it, enabled oneself to realize it, to become aware of it as something universal in the individual experience of oneself (Froese & Gallagher, 2010, p. 89).

There is a paradox here: One seems to be aware of – and to know much better now – *how* one carried through the thinking process, *how* one dealt with the transition from one concept to another and followed the line of reasoning, the arguments in the proof, and *how* one was the agent of all these performances – yet this awareness appears only *after* one did all this. It appears most prominently in the post-action period (post hoc), that is, *after* the transition from acting to just noticing and reflecting on the experiential outcome. It seems that *during* the performance one has no (or at least not a very specific) access to the pre-reflective performing qualities, to the performing experiences. Might it be that one just did not notice them? In contrast, one was immersed individually in the conceptual contents and cleared them up as deeply as possible. Note, these conceptual contents are now, after being brought into experiential existence, only accessible in their fixed representational mode – they have lost their transparent dynamic relational context. If something seems wrong or unclear with these concepts in the post-action mode, one has to re-enact the thinking-action process to make things clear again.

Results and Consequences Concerning the Thinking Self by Extending Our Awareness

Let us take up the paradox that one is fully aware of the involvement in the previous active thinking episode and its specific structure only *after* one has finished the thinking action; *during* the performative action there seems to be *no* space for noticing the involvement while one is committed to – and aware of – the conceptual contents one is bringing to experiential existence (Petitmengin & Bitpol, 2009).

This may shed some light on the question of the intentional character of thinking actions, namely that this needs not be a specific feature of the structure of consciousness within such an action. It is, in this regard, important to note that the above-mentioned paradox cannot be solved if one declares, or insists, that experiences *must have* an *intentional* structure, namely that they are about something: like experiencing a yellowish apple or an mental event as a thought. However, within active or pure conceptual thinking this is not the case for conceptual relations. One does not experience conceptual relations as propositional structures, but experiences a somehow pre-predicative, pre-propositional content that appears as predicates and/or as propositional forms *after* finishing the thinking action and reflecting about it: They are the *sources* upon which these

propositions are built or formed. In thinking actions, one is not thinking *about* but *within* conceptual constellations, seen as essential structures. This is best seen from the fact that the truth of a proposition like "5 is a prime number" cannot be assessed from the structure of this being a proposition itself, but only from the conceptual content it represents. These, however, show up only *within* active performative thinking periods (unless one simply rehearses or remembers the relevant arguments or premises). Within active thinking, one brings the relevant conceptual relation into experiential existence and within that experiences their content directly without assuming or just knowing the truth values in advance (for the question of the intentional or non-intentional structure of thinking, see Gutland, 2018).

Rather than drawing the consequence that this prevents one from having a decent phenomenology of the thinking experience in action (Kriegel, 2011; Tye & Wright, 2011), we propose to expand the awareness, and with it the phenomenology, to experiences *within* active processes (Gutland, 2021). Within this active involvement, there is no intention to meet, encounter, or step over a thing outside this action; rather, the experience comes *with* its rendering into experiential existence through thinking action – as is the case in the actual experience, in the presence of conceptual constellations within pure thinking actions. One does not find conceptual content by looking around for them somewhere, waiting for them, so to speak. Instead, one has to actively *reveal* them *within* the thinking performance. Hypothesizing that these were constructed by oneself presupposes them: (a) one would need to know their content and structure in advance in order to be able to construct them explicitly and specifically; in addition, (b) one would unwarrantedly assume unknown sources of the construction materials needed. If one supposes, however, that this construction process happens in a blind manner, unconsciously, etc., then this contention has apparently no direct phenomenological basis and hence cannot be a construction in any phenomenological conscious sense. We consider this to be an important point since it is often ignored with unreflected self-evidence.

The approach we are proposing is based on research into extended awareness (Petitmengin & Bitpol, 2009) according to which one expands the awareness to action processes at the fringes of the thinking consciousness. The important and critical question here is: How does one notice the characteristic features of what one experiences *during* thinking actions? To be sure: Some experience of action-involvement must have happened, otherwise one would not know anything about it later. And it is quite common that one experiences oneself as (having) acted in thinking. In truth, the difficulty must lie certainly in the fact that these particular experiences *within* thinking actions are not easily accessible, that is, they are not easily accessible facts occurring *during* thinking actions. If such a mode of consciousness exists, it might be called an *immersive mind-set* that does not lose the capacity of witnessing what is happening while it is happening (Weger & Herbig, 2021).

To begin with: To notice something one has already experienced, one needs to know somehow what to look for *within* the actual experiential horizon. Concerning the experiential scope of the self, one is in the comfortable position that one knows quite a bit about the involvement in the conceptual thinking process *after* the period of action (see above). From this fact one may infer, as mentioned above, that since one knows about this involvement *after* the action, there must have been some experience of it *during* it – one only failed to notice it. It appears as if there was only a thinking action but no experience coming with it while executing this action. To continue this line of thought one has to assume that this post hoc knowledge about the self-involvement is reliable, that is, reflects what really happened. Needless to say, one could worry that this is not the case; however, there is no direct evidence for this worry: One does not experience the transition from active thinking to post hoc acknowledgment of it as something alien, corrupting, or altering severely the content one experienced other than its active vs. passive presence. In order to assess the results of such a reflection in a post-action mode and put them in an accessible form that takes up the generalizable features of the subjective agentive involvement, we give a structured summary of what constitutes the most relevant facts.

(i) The thinking process is goal-oriented, initiated by a goal from the thinking agent which we call the *thinking self*. This goal might not be what one *specifically* tries to think, but it includes at least the overall goal to *think actively*, performing a thinking action
(ii) Within its goal, the thinking self is trying to execute the goal and persists in doing it while revealing various concepts and their relations, bringing them into experiential existence.
(iii) The thinking self is performative in the sense that it brings various conceptual constellations in the sense of essential structures into experiential existence, assesses them, and is aware of what it experiences.
(iv) The thinking self is the only *agentive* source of its performative action: it is committed to unrestricted dedication or immersion.
(v) Concepts and conceptual relations appear as universal invariants of the individual thinking action and hence of the individual thinking self.
(vi) The thinking self is itself invariant with respect to the contents of thinking and the variations that it brings into experiential existence. In other words, the thinking self – which is a performative agent present

permanently during thinking actions – *perdures* and/or *persists*, and stays the same, while conceptual contents appear in and out of its focus.

(vii) The thinking self initiates and closes its specific thinking episodes.

What we have here is, in our opinion, an inference to the best consistent hypothesis about the nature of the thinking self, namely the self immersed in thinking action, and seen as a performative agent. Whether these hypotheses are true or not cannot be decided alone by looking at the post hoc facts, from where one deduced them. Only from their application to and assessment *within* an ongoing conceptual thinking process can one hope to verify them. To illustrate this, or better, to show that these hypotheses can be confirmed by an awareness accompanying and encompassing the process-like thinking actions, we apply them to the example from the beginning of this text and assess them by way of setting up a phenomenal contrast.[2]

Phenomenal Contrast: Occurrent Thinking Versus Self-Initiated Thinking

We now expand our earlier phenomenological analysis by studying a phenomenal contrast in order to come closer to our goal of characterizing the thinking self during the performance of a pure thinking action.

Pure thinking action means here that one has initiated an active performance of a pure conceptual thinking process. We focus within this section on various aspects of the involvement of the self, having presented similar contrasts concentrating on the conceptual content of a thinking action and its agentive aspects elsewhere (Ziegler & Weger, 2018, 2019, 2023; for the method of phenomenal contrasting, see Bayne, 2020, pp. 150–152; Chudnoff, 2015). Instead of simply, or naively, speaking of a "sense of agency", which is much more complicated than one might think (Gallagher, 2012, 2013), we take up and expand on some suggestions from the literature (Mylopoulos & Shepherd, 2020, pp. 174–183) to be more specific of what it could mean (see the categories of the thinking self in Table 1). We assume that according to the previous section we are able to extend the consciousness to its fringes or margins where one may find additional bits of agentive phenomenology (Bayne, 2008, p. 108; Mangan, 2001; Mylopoulos & Shepherd, 2020, p. 169; Petitmengin & Bitpol, 2009), namely where one may notice what one is experiencing by looking at the relevant places in the overall consciousness using the conceptual perspectives we found within the post hoc assessment of pure thinking action in the previous section. This enables us eventually to bring these experiences into a communicable form that transcends a personal perspective.

(1) *Purposiveness, trying:* To begin with: take a pure thinking action of a thinking self involving the concept of a prime number. This act is set-up after the gathering of some spontaneously known or remembered knowledge of the concept of prime numbers and happens before this act has receded to simply acknowledging or accepting the results. Initiating it means having to set up a goal (exploring numbers and their divisibility), trying it out (Peacocke, 2007), and executing it. Furthermore, it means holding it up by overcoming obstacles (missing links or gaps in the relational context) and difficulties (waning dedication, mind wandering, etc.) by trying to stay focused on exploring the subject. The purposiveness needs to be strong in order to persevere.

In contrast, just having thought events instead of bringing them into experiential existence by oneself due to a pure thinking action, means the self is observing them flowing in, flowing by, and eventually disappearing: Strawson talks of "mental ballistics" here (Strawson, 2003). One may have had the intention to think about prime numbers, however, this does not guide the thinking process anymore: a mental representation of it might accompany it but it does not execute it. One does *not directly* participate in the coming of concepts into the consciousness, one is only mediating this process; one may have triggered this process by other activities as is the case with inducing memories (Mele, 2009). One can only acknowledge that they come by, are there, and disappear eventually and that the self is experiencing them.

(2) *Mineness: perseverance and dedication:* In a pure thinking action of a thinking self, the experience of mineness is very strong and there is no reason to doubt this experience to begin with. One is aware of the actual, present authorship in the sense that one has selected the purpose or goal (natural numbers), directed the thought process (to the factorization of natural numbers into prime numbers) and is devoted to carry this through. One is dedicated to what one does and keeps up the structure of the argument such that one is able to execute an indirect proof (namely of the infinity of the set of the prime numbers), where one assumes something coherent, easy and (seemingly) self-understanding, only to find out by carrying on the thought processes that this eventually leads to a contradiction with the premise(s) as established fact(s). All this furthers the

[2] One needs to be aware of the fact that the following contrast relies crucially on the mode of pure thinking actions shortly described above that has not been explored very often (Ziegler & Weger, 2019). As will be shown in a separate paper (Ziegler & Weger 2023) pure thinking needs to be acknowledged as a separate and new mode beyond the well-known differentiation between Type 1 and Type 2 thinking processes (Frankish, 2010).

Table 1. Phenomenal contrast: Passive self in occurrent thinking and active self in thinking actions

Categories of the thinking self	Pure conceptual thinking action	Occurrent thinking as chain of thinking events
(1) Purposiveness, trying	Goal set-up, initiating, overcoming obstacles, staying focused, perseverance of goal due to strong purposiveness	Observation of floating thoughts: coming in, staying, disappearing, acknowledging the presence
(2) Mineness: perseverance and dedication, authorship	Actual authorship, selected and direct thought process, dedication to keeping up with long arguments, perseverance due to self-as-source, agent causality	Mineness only with respect to presence of thought, dedication to receive, acknowledge, expect, exposed
(3) Execution: initiating, closing	Specific initiation, self as producer, mostly specific closing by the self	Random beginning, onlooker, closing of current thinking by a pure thinking action (that is, no closing by itself), closing by mind-wandering, falling into sleep, etc.
(4) Action awareness	Action awareness not separable from action execution	Action awareness with respect to foreign or past actions one is observing
(5) Action assessment	Procedural, ongoing quality assessment	Assessment of fixed results
(6) Encounter	Action encounter of or participation with universal invariants (conceptual content: structures, essences) with respect to individual thinking action	Exposure to propositional structures that cannot be assessed concerning their validity
(7) Autonomy: invariance of the self	Self-reliance, self-invariance, self-determination	Performative self exposed to foreign events, determination by occurrences happening outside the performative self, detached isolated self

conviction that this process of pure conceptual thinking action depends on the self-as-source of the whole performatory action – however not of its content (Horgan, 2007, p. 8, 2011, p. 65; Horgan et al., 2003; Mylopoulos & Shepherd, 2020, p. 174–183). Concerning pure thinking action, one cannot lay back and observe what is happening (otherwise the individual process action stops) due to some other sources of action, since there are none; one has to keep it up, one has to continue, one has to persevere in the action by oneself. This goes a long way towards what some authors call agent causality or agent causation (Clarke, 2010; Tewes, 2017): the performing self is the ongoing agent cause of the pure thinking action and not itself caused by some outside event or source (Mylopoulos & Shepherd, 2020, p. 178).

In contrast, in the case of merely having thought events, for example, memories of the factorization theorem or of post hoc experiences of past thinking actions, is there any indication of mineness? Yes, for sure, one knows that the self holds this memory, but has it authored it? Maybe, maybe not, but definitely not in this moment, maybe sometime in the past (due to a pure thinking action!). The individual dedication while having thoughts lies in receiving them or acknowledging them (maybe additionally reflecting about them), maybe even in expecting this input, but not in bringing it into experiential existence directly, only in bringing it about or having it mediated by some preliminary activity (Mele, 2009). This means that one has a sense of ownership of these thoughts, but no sense of agency concerning their coming to experiential existence (Gallagher, 2000, p. 16). The self is not the source of bringing these events into experiential existence: the self is only the spectator looking at them, experience them popping up, passing by, and disappearing eventually.

(3) *Execution: initiating, closing:* Concerning execution, pure thinking processes have a clear intended beginning, an impulse of initiation; they begin with their own action, they do not happen by chance, but by their own will. One starts in most cases with some questions or the experience of lacking some conceptual connections (Anderson, 2018). One is not an onlooker of some event, but the producer. The same holds in general with the closing of a specific pure conceptual thinking process or action: In many cases, one decides to concentrate on something else, namely the mere results, or does dedicate oneself to having sense-perceptions, to having memories, etc. To be sure, sometimes, maybe more often than not, one is not closing the action by oneself and instead is 'thrown out' of the self-executed thinking process by associations, sensual events, flashes of insight, memories, etc.

However, such un-executed incoming events deepen the experience of the self concerning the contrast between pure thinking and just having thoughts. It is not oneself, not the conscious thinking self, that stops or even initiates and guides directly the experience of having thoughts (Strawson, 2003); this chain of events depends on factors outside the performative thinking self. However, by initiating a pure thinking action, the thinking self may induce indirectly the chain of events of having thoughts to disappear from the main focus of attention as a consequence of the action.

(4) *Action awareness:* Within what we call extended awareness, action awareness cannot be separated from action execution: this happens during the same time interval, has no temporal succession, and may even be thought

Table 2. Dimensions of the thinking self

	Thinking self				Self within thinking action
	(I) Representational thinking self	(II) Naive thinking self, performative self: Basic experiential dimension	(III) Observational thinking self	(IV) Reflective thinking self	(V) "Core self": Self conscious in thinking action; critical thinking self
Relation	Enhanced by (IV)	(II) plus (IV) leads towards the «core self» (V)	Enables transition from (II) to (IV)	Reflection of (I) and (III)	Applies perspectives (II), (III) and (IV)
Structure	Intentional	Non-intentional	Intentional	Intentional	Non-intentional
Awareness	Receptive	Performative	Receptive	Reflective	Performative, expanded awareness
Content	Representational, earlier results, results by other thinking persons	Pre-predicative, pre-propositional, pre-reflective	Pre-reflective	Inferential, reflective, representational	Post-reflective, sense of action
Source	Lived experiences, memories, associations, intuitions	Productive thinking self	Traces from productive thinking actions	Reflection of the traces from productive thinking actions	Performative thinking self within thinking action
Evidence	Preliminary	Primary	Secondary	Tertiary	Primary
Participation	Acknowledgment, taking note	Bringing into experiential existence	Immediate capture, post hoc	Reflective	Conscious immersion
Time structure	Coming, staying and disappearing of events	Dynamic, synchronic	Post-dynamic, retention, diachronic	Memories of earlier actions or events, diachronic	Dynamic, synchronic
Basis for:	Given knowledge about the thinking self	Evidence of thinking action	Observational material to be processed by reflection (IV)	Theories about the thinking self	Consciousness of self *during* thinking action

of as being one and the same if one sees conscious action of a thinking self as something that cannot be executed without awareness of what one is doing.

Within chains of events in the sense of having thoughts that were brought about by some preliminary action, there cannot be any action awareness since there is no action, except the awareness of an activity coming from outside of the self-executing a performative thinking action. These are activities one is simply observing and not doing oneself directly, hence there is no sense of agency since there is no agent.

(5) *Action assessment:* However, during the pure conceptual thinking action of the self one is not blind to what one achieves – to the contrary: One is persistently or simultaneously aware of the consistency and the intrinsic interrelatedness of the conceptual contents and conceptual relations. One is not just combining concepts by subjective criteria, or formal rules, like building blocks but exploring them according to their own content. This looks more like a procedural assessment, ongoing quality control of the thinking action of the self, rather than a control of the end result already finished and fixed in a propositional frame.

Action assessment in the sense of assessing of what *has been* achieved as results of a thinking action is the main subject of the post-action period *after* finishing such a process of pure thinking action. This may be another action, however, its material stems from some past actions.

(6) *Encounter:* In pure thinking actions of a thinking self the universal contents are revealed, they are found as invariants with respect to the thinking action: they are structures or essences that are found, discovered, and as such not products of the thinking action (Ziegler & Weger, 2018, 2019). It might be described as if the own thinking encounters something in which it participates in order to become aware of the relevant conceptual relations (as in our example the relations between numbers, divisibility, and prime numbers). The thinking action of the thinking self is at the same time engaged in bringing into experiential existence universal contents (structures, essences) and making them aware of the thinking self in action.

In contrast, having regular, everyday thought events means for the actively thinking self to be exposed to propositional structures that come with truth values that cannot be assessed, proved, or disproved within this kind of chain of thinking events (for example the proposition: there are infinitely many prime numbers). As propositional attitudes, these truth values are not within the grasp of the receptive thinking process: they have to be accepted as such or ignored with no possibility to evaluate them – except by entering into a performative thinking action again due to a thinking self.

(7) *Autonomy: invariance of the self:* Finally, the phenomenal contrast between pure performative conceptual

thinking action, namely the thinking self, and the chain of events by just having thoughts shows how the own agentive self is involved: In the active thinking process the self is deeply immersed, engaged in bringing into experiential existence universal conceptual contents and their relations depending on nothing else than on its own action to reveal these structures or essences. This demonstrates the autonomy of the thinking self as it is the one and only agency that brings into experiential existence this revelation: it encounters these structures or essences and needs not to rely on events foreign to its own action that may determine its way of action. Furthermore, these actions suggest that the thinking self is an agentive invariant: Its action transcends its changing contents, it builds the actual bridges that reveal the conceptual constellations it is engaged with.

In contrast, the self engaged in occurrent chains of thinking events, namely just having thought events feels exposed to events it cannot master or assess other than accepting them. It feels determined by outside causes, reduced to a status of mere onlooking with no leverage to bring itself into the process as long as it stays within this kind of thinking events. There is no autonomy in this process, particularly no self-reliance and no self-determination. As a bystander, the self might feel some invariance; however, as isolated as it is in being outside the process, it feels detached from it, namely as having no relevance to it. The self feels lost and of no use – at least not for the exploration of the world of conceptual thoughts.

This closes our tour of the phenomenal contrast concerning the engagement of the thinking self within performative thinking actions versus the self in the status as a receiver of conceptual thought events (see Table 1).

We find that these contrasts settle, at least in a first approach, the confirmation of our seven hypotheses concerning the performative self, or the self in pure thinking action, at the end of section "Results and consequences".

We now confront the experiential facts from the seven contrasts (1) to (7) above with our seven hypotheses (i) to (vii) from the end of the previous section: The contrast (1) about purposiveness and trying settles hypothesis (i), namely the goal-orientedness of thinking actions. – The contrasts (1) about purposiveness and trying, (4) about action awareness, (5) about action assessment settle (iii), namely the performative action of the thinking self bringing conceptual contents into experiential existence. – However, for (i), the goal-orientedness of thinking actions, see also contrast (3) about execution (initiating and closing) of thinking actions. – Further, the contrast (2) about mineness (perseverance and dedication) settles (ii), namely the performative action of the thinking self bringing conceptual contents into experiential existence and it settles also (iv) concerning the self as the only agentive source of its performative actions. – The contrast (3) about execution (initiating and closing) of thinking actions settles (vii): the thinking self initiates and closes its specific thinking episodes. – The contrast (6) about encounters of universal conceptual contents while actively thinking settles (v): namely, concepts and conceptual relations appear as universal invariants of the individual thinking action and hence of the individual thinking self. – Finally the contrast (7) about autonomy of the invariance of the self settles (vi): The thinking self is itself invariant with respect to the contents of thinking and the variations that it brings into experiential existence.

Consequences: Five Dimensions of the Thinking Self

We now bring together a range of dimensions that are central to the individual self by contrasting the performative or agentive thinking self with other modes of the thinking individual. The most important aspects are summed up and structured in Table 2. We take our material from explorations laid out in earlier parts of this paper, concentrating and expanding them as necessary.[3]

(I) First of all, there is the lived experience of the thinking process: It encompasses all one knows, may have heard, or read about the theme of thinking within psychology, philosophy, etc., without assuming that all this needs to be true. The main feature of this dimension seems to be the fact that one has a fairly robust knowledge and experience that thinking happens within oneself and with the own self. Furthermore the thought of myself as a thinking agent accompanies most of my perceptual, sensual, emotional, and volitional experiences. One acknowledges this by experiencing an individual thinking life, an individual emotional and volitional life, apart from all other persons. All this draws heavily on the representational memory, on the personal narratives from which one composes who one is over longer or shorter time intervals. One does not need to do much about this: This dimension is just there; regarding the thinking life, it will hence be called the *representational thinking self*. The evidence for this representational self is at best preliminary, the awareness receptive. – We only mention that this is the place of propositional attitudes, memories, imaginations, embedded thinking (i.e. thinking within social, cultural, and educational environments, etc.).

(II) Once in a while one is compelled to think (maybe intensely) about something, being not satisfied with what one already knows. In most cases, one is not even aware

[3] For another approach, see Ziegler (2013). The following might be thought of as an expansion of the different categories of the self introduced by William James (1890).

that one is thinking presently: One is immersed within the content that one is mulling over to such an extent that one "forgets" about the fact that one is doing it oneself. As a rule, these thinking periods are (very) short – a fact which also prevents oneself from realizing the performative action in its primary evidential form while doing it. In addition, this experience does not come in the form of other experiences: It is not intentional, one cannot look at it as if it were present *before* oneself, one is actively *within* it and thus as such is lost in the possibly reinforcing experience of finding something out about oneself. This part of self-experience or self-consciousness within thinking action which is not reflective will be called the *naïve performative thinking self*. This observation of the immediate experiential character of thinking action is a common feature of virtually all writers in the phenomenological tradition (Gallagher & Zahavi, 2013, p. 52):

> "Literally all the major figures in phenomenology defend the view that a minimal form of self-consciousness is a constant structural feature of conscious experience. Experience happens for the experiencing subject in an immediate way and as part of this immediacy, it is implicitly marked as my experience. For the phenomenologists, this immediate and first-personal character of experiential phenomena must be accounted for in terms of 'pre-reflective' consciousness."

(III) However, as soon as the thinking action is over, one may become aware of what one has done: One realizes *that* one has been thinking and *what* one has been thinking about, just as something that comes to the mind without further ado. One is sure that one has done it even if it is over now. This is a diachronic experience of thinking action: It happens *after* the period of action, namely post hoc, and includes traces from the foregoing period of action, which, as this experience shows, are accessible to the self. This *observational thinking self* is the main source of what one knows about the own thinking action and the involvement of the self: It encompasses the subject matter in such a form that one may think *about* it. However, it does not give oneself the primary experience of current thinking. Instead, it presents one with traces from it as a kind of secondary experience that seems to include much of what one wants and needs to know of the thinking action, the involvement of the self, its inner gestures and structure, namely *how* one as a self was doing the thinking action. Since one assumes this observational thinking self to appear immediately after the performative thinking self, without a time gap, without doing something else in the meantime, it is retentional in an extended sense, that is, drawing directly on past events without forgetting them in the meantime (see for the original meaning of this Husserlian term Zahavi, 2003, 2012) rather than based on plain memory, which includes forgetting beforehand.

(IV) In order to achieve trans-personal results, one needs to reflect on these experiences after some time again and again, compare them with the results of earlier investigations into thinking periods from the own thinking life, and with such experiences from other thinking persons. This is the main goal of the *reflective thinking self* which draws together from the memory of what appeared within the observational thinking self, what one has found out oneself, and how this compares to results from others. Hence this self is historical or narrative in its structure, it encompasses the histories of the thinking actions as far as one is aware of them as well as intentions towards the future of what one plans to think about. As long as one stays close to the own experiential thinking life coming from the observational thinking self, the results are grounded in thick experiential evidence. However, as life goes on, these moments of direct representational evidence dim away and – if one does not re-enact another period of thinking action – one is left with theoretical results in the form of mental representations, mainly propositions of what one thinks the essence of performative thinking action is, maybe (or was, for that matter). These results of individual reflections thus will be transformed into what was the starting point: The *representational thinking self*. In other words: All one did by reflecting on the own thinking actions and on the own thinking self, will eventually be part of what one just knows about thinking actions without being left with direct experiential evidence.

It turns out that philosophically and phenomenologically speaking the most important dimension of the thinking self from Table 2 seems to be just this *reflective thinking self* for at least two reasons: (1) It takes its evidence directly from thinking action experiences and develops theories about what thinking is and how it works. (2) It is the source for the perspectives and for the guiding concepts needed to explore the primary pre-reflective and prepredicative pieces of evidence with the expanded awareness to the fringes of the consciousness *during* performative thinking actions (see above).

(V) The exploration of the thinking self as such during performative thinking actions needs to be done *before* these primary pre-reflective and pre-predicative pieces of evidence freeze into secondary pieces of evidence that constitute the observational thinking self (III), where they come in as something already tied to predicates and propositions (which allows, for example, just to *know* the difference between thinking content and process qualities such as the kind of awareness, the involvement of the self, etc.). By delving consciously into a thinking action, one actually executes this expanded awareness within the performative self while using the results from the reflective thinking self as the guiding principles or action goals. As a consequence, (a) the experiences from the agentive self naively perform-

ing its thinking action become noticed (that is, not only experienced) and thus (b) become self-critical, that is, the self becomes conscious of its own action in a non-intentional mode. This leads to the look for extended awareness which encompasses and includes that one experiences synchronically a dynamic, guided thinking action where the agentive self is the source of its performance, its awareness, as well as its encounter with participation in and assessment of conceptual constellations. In the same manner, as one may say that concepts are invariants of the thinking action (see the section "Phenomenal contrast", No. [6]), one may see the agentive self itself as an active invariant within thinking actions: it acts and stays the same during several consecutive thinking actions. We call this self within thinking action that is conscious of its agency and its content *during* thinking actions in a post-reflective, non-intentional mode the "*core self*".

Discussion

Different Conceptions of the Self

We will now provide a very short discussion of some psychological and philosophical conceptions of the self that appear to play a major role in recent discussions within cognitive sciences, theory of mind, phenomenology and particularly within cognitive phenomenology. We then try to figure out where the most important dimensions of the self in thinking action – namely the naïve thinking self, the reflective thinking self and the "core self" discussed in this paper (see Table 2: II, IV, V) – find its place within this spectrum. It is noteworthy that in many recent surveys or discussion of the (phenomenal) self the dimension of the thinking action is neither discussed nor mentioned at all (Alsmith, 2015; Baumeister, 1998; Dainton, 2016; Damasio, 1999, 2010; Damasio & Meyer, 2009; Gallagher, 2000; Horgan & Nichols, 2016; Ismael & Pollock, 2006; Mele, 2011; Pacherie, 2011; Searle, 2005; Shoemaker, 1988; Strawson, 2011b, 2011a; Swann & Bosson, 2010; Zahavi, 2011b, 2011a, 2012, 2017, 2020).

Let us start with an influential theory of consciousness from Damasio (see Damasio, 1999, 2010; Damasio & Meyer, 2009). First introduced in 1999 and then expanded in 2010, Damasio proposes a three-tier structure that encompasses three kinds of self: protoself, core self, and autobiographical self. The first is anchored in bodily processes and entirely below consciousness, the second emerges in moment-to-moment experiences when the first interacts with objects outside the body, perceiving and stimulated by them (comprising feelings, mental images, etc.) without being a fixed entity and with no connection to identity and personhood. The basis of the core self is core consciousness; this "is a simple biological phenomenon, and its mental aspect is comparably simple; it operates in stable fashion across the lifetime of the organism; and it is not dependent on conventional memory, working memory, reasoning, or language". (Damasio & Meyer, 2009, p. 6). Finally, the autobiographical self with an extended consciousness relies primarily on the memory of past experiences which involves the usage of higher thought. This self "is a relatively stable collection of the unique facts that characterize a person" (Damasio & Meyer, 2009, p. 6). From the perspective of the present paper, only the autobiographical self is relevant and concerning its thinking processes corresponds more or less to our representational thinking self. Already on the basis of this brief discussion, it is evident that our core self (see section "Consequences", (V)) is entirely different from the core self of Damasio. Also, concepts such as the true or ideal self, as described for instance by Strohminger et al. (2017) describe the self more in terms of qualities rather than actions and do not capture what we describe as the core self. Where process qualities are emphasized such as in the concept of flow (Csikszentmihalyi, 2017), the focus is typically on aspects other than the self.

There are two conceptions of the self that are important for philosophy and cognitive phenomenology as well as for the cognitive sciences (Gallagher, 2000; Zahavi, 2011b, 2020): the minimal self and the narrative self. From a different perspective, namely from the interplay of selfhood and temporality, one finds similar conceptions of the self (Zahavi, 2012).

(1) The *minimal self* encompasses the following basic features: While one experiences something, one has an immediate self-consciousness of this, that is, one is aware of *what* one experiences as well as *that* one experiences something. No part in this conception leaves room for the exploration of whether this momentaneous experience can be extended to include past thoughts or actions or whether there is a continuity of identity over time. The minimal self seems to be close to the conception of the core self of Damasio.

(2) In contrast, the *narrative self* involves narratives one may have (had) about what and how one experienced the own self, including memories of the past and intentions towards the future. It is a somewhat broader view towards the self that is extended over time. The narrative self might be thought of as a contemporary reading of David Hume's contention that the self consists of "a bundle or collection of different perceptions, which succeed each other with an inconceivable rapidity, and are in a perpetual flux and movement." Consequently: "The mind is a kind of theatre, where several perceptions successively make their appearance [...]." This comes from the fact that "when I enter most intimately into what I call *myself*, I always stumble

on some particular perception or other, of heat or cold, light or shade, love or hatred, pain or pleasure. I never can catch *myself* at any time without a perception, and never can observe anything but the perception." (Hume, 1739, I iv. 6) The narrative self seems to be close to the conception of the autobiographical self of Damasio.

(3) In another approach to the self, its phenomenal character is denied; however, its conceptual and metaphysical necessity is called for by the condition that every experience presupposes an experience: someone undergoing this experience. This is a mere assumption: One may conclude that a self exists, but it is not a given experiential fact. A recent version of this view seems to be proposed by Prinz: "[. . .] the self is always present in the perceptions given to us in consciousness. It is present, not as an item of experience, but as a kind of constraint." (Prinz, 2012, p. 149). Searle argues in a rather similar way: While denying the experiential visibility of the self, he says: "Notice that the postulation of the self is not the postulation of a separate entity distinct from the conscious field but rather it is a formal feature of the conscious field." (Searle, 2005, p. 16)

In view of our proposal that the self-performing a thinking action may be aware in an extended mode of awareness of itself as acting – our "core self", see (V) in Table 2, the third approach does not fit well. In addition, since we refer in this paper to experiences of the self *during* performing thinking actions, the narrative (or for that matter the autobiographical) approach is not sufficient either: the "core self", or the thinking self as performative agent cannot be remembered as such: a memory of or a narrative account on a self immersed in thinking action is not itself a self within a thinking action in the above sense. However, what we have called the reflective thinking self in the preceding section – see (IV) in Table 2 – is in fact part of the narrative self, namely encompassing narratives of the thinking life.

For the "core self" this leaves one with the position of the minimal self which is due to the approach called *experiential minimalism* (Zahavi, 2020, p. 637). This view has been defended by Zahavi for several decades, but comparable views can also be found elsewhere (Strawson, 2011b, 2011a). Essential features of this approach are: "[. . .] experiential processes are characterized by an inherent reflexive (not reflective) or pre-reflective self-consciousness in the weak sense that they are like something *for* the subject, that is, in virtue of their mere existence, they are phenomenally manifest to the subject of those experiences." "[. . . P] re-reflective self-consciousness is precisely taken to differ from reflective self-consciousness by being an intrinsic non-objectifying form of self-acquaintance." (Zahavi, 2020, pp. 637, 639) Concerning the self, this leads to the *minimal self* (Zahavi, 2017, 2020), for which the for- meness is an invariant dimension of its phenomenal character in conscious experience (Zahavi & Kriegel, 2016).

Some features of the self in thinking actions – in particular the naïve thinking self and the "core self" that is conscious in thinking action, see (II) and (V) in Table 2 – are in accordance with this minimal self: the phenomenal self in thinking action is present only *within* a thinking action, not outside of it. Also, it is not separable from this action as such: There is no performative conscious self outside or better: before or after any thinking action. However, as we see it, there are four major issues that are not dealt with in the concept of the minimal self: (i) Although the self within thinking action cannot be separated from this action, it is distinguishable from it: on the one hand, the thought contents within pure thinking actions are concepts and conceptual relations (see our example above in the second section) and on the other hand, the self in this action is experienced as the source of this action, not its object. (ii) Another distinguishing factor from the concept of a minimal self lies in the experiential fact elaborated above that the thinking action of the self is invariant regarding its objects (conceptual content, structure, essence): it stays experientially the same while objects might change. (III) A third difference to the minimal self lies in the fact that we see the self (as we see the thinking action in Ziegler & Weger 2023) rather as a powerful dynamic potential, as a process-like entity (Guillot, 2016, p. 147; Weger & Herbig, 2019, 2021), and not a property-like entity having dimensions of experience or experiential properties. This seems close to what Fichte had in mind with his "Tathandlung" (Wood, 2019). (iv) The basic pre-reflective experiences of the naïve performative thinking self, in particular the self-as-a-source, the self as agentive power of thinking action is firmly situated within the minimal self. This is the basis for the reflective thinking self and eventually for the "core self". However, the "core self" is neither part of the narrative self nor the minimal self: it is actual, neither reflexive nor reflective, nor merely prereflective: We call it postreflective, indicating its presence as well as its extended awareness and invariance. It not only has its pre-reflective experiences, but notices and grasps them *during* thinking actions without reflecting first about them. Instead, it lives consciously and invariantly within them.

One aspect of the "core self" in thinking action is crucial and separates it from most other approaches toward the self, namely that it is the *source* of its own action or agency and hence the active invariant within thinking actions. The self in thinking action is not just looking at or accompanying the thinking action, but performing it causes it in this sense. This makes the "core self" in thinking action stick out rather conspicuously among other self-conceptions: Indeed, on the one side, it is part of the overall experiential horizon of thinking action (Ziegler & Weger, 2023), but on the other side it is also the source

of its presence, not just some ingredient on a par with other experiential features or phenomenal properties.[4]

Although one has no separate or exclusive experience of a self-in-action, one may infer from the fact that the self appears in definite time intervals and that it initiates and closes specific thinking actions that it cannot start to exist just for such an act and disappear after it – otherwise, it has to be recreated every time one starts a thinking action and has to be extinguished after closing such an action. But by whom or what? We then think that all this goes a long way to postulate a powerful substantial and process-like "core self" initiating thinking actions while being immersed in the own mind; however, we cannot discuss this matter further at this place.

One might use an analogy here for the fact that one finds universal conceptual content immersed in the individual thinking experiences within a pure thinking action: the "core self" in thinking action shows up as something perduring *within* an individual thinking action. This applies to the structure or concept of the "core self" elaborated in this paper as well as for its action or power: there could not be an individual action without a "core self" transcending this individual action (since this "core self" is not identical with this thinking action) structurally as well as being the universal source of all its individual thinking actions.

Conclusion

The main steps to experience, notice, and expand the thinking life towards what we have called the "core self" are the following. First, one needs to think (in the mode of a pure thinking action) vigorously about something rather hard, – better not about something for which one already has basic routines that one may run through automatically. Non-trivial mathematical examples are a good start, but other psychological, philosophical, or (natural) scientific theories might do as well. Second, after finishing such a thinking adventure one needs to notice and to reflect about what one has been doing and how one was doing it while thinking, unearthing the prereflective elements of the thinking self that have been present before but were so far not noticed. This might necessitate another thinking action to refresh the material one wants to notice and reflect on.

Third, one has to identify some characteristic features of the thinking self immersed in a pure thinking action, namely the features of the so-called "core self". They can be used to orient oneself within and during a self-initiated thinking action period: One has to expand or extend the awareness from a prereflective as well as a reflective mode towards a postreflective mode that is aware and conscious of what is going on in a thinking action without first stopping it and then reflecting about it afterwards. One then needs the thinking power not only to unravel conceptual relations but also to focus on, or bring into perspective, features that go beyond content, namely towards the acting source: the "core self".

What one at last arrives at is a self-consciousness of the "core self" that upholds itself while immersed intensely in something other than itself. Such is the power of the autonomous "core self" while performing and at the same time experiencing a thinking action. Much is left out concerning the understanding of the self. This paper is only a beginning for another, or a new period where the "core self" features as something highly relevant for the thinking human being.

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[4] We note here that the importance of the "Thinker Intuition" or the "Phenomenology of Intellection" for the phenomenology of the self in view of the self as source of these very experiences is also stressed by Marie Guillot (2016).

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