

*Editorial, 2023, February*

## **The Multi-Cube: The Relativity of the Observer of Person in Situation**

This article is the next in a series of theoretical discussions that aim to present a theoretical basis for conducting research on the subject of experiences across time in cognitive and educational psychology. Eventually, the research repository RRREaT-PT is meant to present studies that involve the complex relationships between situations, people's experiences, and time to understand phenomena in cognitive and educational psychology, which are also complex in terms of the variation and the dynamical patterns that can arise in the data, but not before these concepts have been grounded in a thorough range of thought regarding the existence of these constructs in the actual world. In the research literature, the current person-situation debate in the social sciences on the influence of situation on mind and behavior has led, so far, to a range of conceptualizations regarding the subject of situation. In this article, I attempt to analyze the underlying assumptions regarding these conceptualizations by focusing on the nature of situation: What is a situation in the actual world? This article presents, first, a brief discussion regarding the major scientific theories on situation and person-situation entwinement and, second, a description of an average and imaginative data-collection session to unravel the way in which situation exists in the demarcated context of a scientific research study. The aim of this article is to disentangle situation from person-situation entwinement to develop preliminary theoretical definitions regarding the nature of situation as it can exist in the actual world.

### **The Debate about Person and Situation: A Truncated Overview**

Human existence is situated. We all know that we experience the world as a succession of situations. When you type the word situatedness into Google, varied descriptions of situatedness emerge. For example, the critical psychologist Costello (2014, p. 1757) writes "Situatedness is the theoretical position that posits that the mind is ontologically and functionally intertwined within environmental, social, and cultural factors." The adult student in Government Studies Katie Laird (2019) writes in her blog that "Situatedness is the notion that our own experiences dramatically shape the way we interpret and respond to the world around us, and that to understand and impact the world around us, we must look outside of our own perspectives to understand the 'why' behind others' perspectives and behaviors." The post-humanistic philosopher Braidotti (2019, p. 54), in defining future humanity, states "We-are-(all)-in-this-together-but-we-are-not-one-and-the-same kind of subject," in that we are situated in historical, socio-cultural structures and inequalities. Von Maur (2021, p. 1), who is a philosopher in cognition, states "We need to acknowledge that emotions are not situated in undetermined 'contexts' but in concrete socio-cultural specific

practices referring to forms of living.” The title of the book of the personality psychologist Hutchins (1995, p. xiii) *Cognition in the Wild* refers situatedness to “human cognition in its natural habitat . . . or context, where context is not a fixed set of surrounding conditions but a wider dynamical process of which the cognition of the individual is only part.” Finally, the title of the book of Hünefeldt and Schlitte (2018), two philosophers specialized in cognitive psychology and the social and cultural sciences, respectively, describe situatedness as the spatio-temporal contingency of human life. In short, situatedness refers to humans existing in their environment, in socio-cultural and historic structures, in the context, and in place and time.

Although human existence is situated, it is very difficult to include situatedness in the social sciences, not only because situatedness can refer to different points of view (e.g., the aforementioned environment, socio-cultural and historic structures, context, and place and time), but also because of the variability of situation and person in terms of the dynamical changes that can occur in situations across time, the variety of reactions of the same person in different situations, but also in similar situations, and the variation in which different persons can perceive the same situation. That is, the complexity of and variability in human existence being situated has led to the yet unresolved person-situation debate, in that there are multiple options to study human situatedness. Overall, the person-situation debate can be divided into four major research approaches: the integration of person and situation regarding (a) situation interpretation and behavior (Fleeson, 2004); (b) dynamic personality (Hecht et al., 2022); (c) the emerging of agency in situations across time (Pickering, 2013); and (d) the coupling of the mind and world (Costello, 2014). A short characterization of these four approaches on person-situation research will follow next.

First, it is assumed in research on situation interpretation and behavior that neither the person nor the situation can affect solely why people do what they do (Furr & Funder, 2021). That is, emphasizing the person means being restricted to relatively stable dispositions or qualities of persons, such as introvert versus extravert behavior. Emphasizing the situation means being restricted to certain elements of situations, such as crowded versus deserted situations. Instead, research on integration of person and situation is focused on the variability of person-in-situation interpretation. A first example of person-in-situation interpretation research is the so-called Behavior Settings Theory of Barker and Schoggen (1973), which is based on a huge amount of data about the community life in two small towns for the period of a year. Their study showed that a large proportion of everyday behavior is appropriate to the context in which it occurs, such as traveling to work in the morning and preparing food. Barker and associates (1978) also found that children’s behavior varied less within specific situations (e.g., arithmetic classes and basketball) compared to the behavior tendencies of particular children. Hence, the kinds of situation prevailed in this behavior-settings research. Another example of research on kinds of situation is Barsalou (2016), who characterized conceptual knowledge as always emerging in the brain against a situational background, such as a bicycle typically being memorized as occurring in a busy street situation. By studying cognition grounded in situations, Barsalou (2016) found that situation involves the following: (a) grain size: local versus global and exemplar versus abstractions; (b) tangibility: perceived as subjectively real; and (c) meaningfulness: pattern completion inference across domains to enable situation interpretation. Another example of research on kinds of situation, but now via psychologically important dimensions is the taxonomy of Rauthmann et al. (2014)

that includes duty, intellect, adversity, mating, positivity, negativity, deception, and sociality. A final example regarding research on situation interpretation and behavior is the Situation Construal Model of Funder (2016), where the interaction between person and situation leads to a personal construal of the situation, which accordingly produces certain behavior. In this model, the situation is defined at the individual level as the readily observable aspects in a situation that can influence behavior, such as its objective structure, incentives, dangers, and rules.

Second, in research on personality dynamics, processes rather than traits or structures of person are studied for the purpose of moving from descriptions to explanations of behavior (Jayawickreme et al., 2021). This research approach includes (a) embodied and enactive approaches or the self-organizing principles of biological processes (e.g., cognition is not simply a brain event because it emerges from processes distributed across brain-body-environment: Gallagher, 2017; action orientation shapes cognitive processes: Clark, 2016; bodies are the active adaptive engagement of an autonomous systems: Di Paolo et al., 2017); (b) preferential processing of certain information based on personal traits and perspectives, which has implications for the processing of, reacting to, and shaping of situations (Baumert, 2022); and (c) genetic and biological factors affect individual responses to repeated experiences in terms of building up temporally robust changes in personality (Tucker-Drob, 2017).

Third, regarding research on the emerging of agency across time, human relations with the environment across time resemble “a dance of agency” between species and regarding species in relation to objects, phenomena, and processes (Pickering, 2013, p. 78). Research on emerging agency began with Heft’s (2020, p. 819) ecology-psychological interpretation of the aforementioned behavior settings (Barker & Associates, 1978) by focusing on individual agency within situations to better understand how individual agency is adapted to or flexible in situations: “Typically, the actions of individuals are appropriate, within a range of normative possibilities, with respect to the *place* where they occur.” In this quote, Heft (2020, p. 819) has italicized the word of place to emphasize that although it resembles largely Barker’s behavior settings, it actually involves “a space-time ecological unit, such as a coffee shop during its hours of operation.” Another example of agency emerging research is Augner’s (2020) update of Behavior Settings Theory, in which agents make decisions in situations due to external characteristics, such as achieving objectives that provide for physical and social rewards. To this end, Augner defined situation as a meso-level set of active environmental, psychological, and bodily factors in their local (i.e., the here-and-now space, place, and time) boundary. A final example is the research on synchronization of individuals in groups, such as what violin players as a group can do to perform in a stable manner (Shahal et al., 2020).

Finally, research on the coupling of the mind and world (Fuchs, 2020; Kirchhoff & Kiverstein, 2020; McDowell, 1996; Northoff et al., 2020) involves the plausibility of the interconnection between body and brain (i.e., objects that enable an internal world), the mind (i.e., a phenomenon representing an internal world that includes feelings and consciousness), and the environment (i.e., the dynamical external world). The brain-mind-world relationship is studied also under the headings of ecological and embodied psychology (i.e., the mind manifests and integrates the current state of the entire organism as it interacts with its environment), spatiotemporal neuroscience (i.e., the brain is not an information processing device, but enables space-time

transformations), and philosophy of mind (i.e., searching for answers to the question of “How is it possible that it occurs in the world?,” for instance, how is it possible that someone can have an experience) that all study the problem of the boundary between body and mind, body and environment, and mind and world. This research approach involves the hypothesis of the extended mind or the debate about the boundary of where the mind stops and the world begins, in that pen and paper can be regarded as the external environment because it is an extension of our thinking (Piredda, 2017). An example of research on the coupling of the mind and world is situated visualization (Bressa et al., 2021) that goes beyond traditional computer desktop applications by visualizing data into their context of use (i.e., mostly technologically oriented and relying on augmented reality). The review of Bressa et al., showed that situated visualization primarily concerns a spatial understanding of person situatedness by distinguishing between (a) space or physical environment, (b) time, (c) place or local identity, history, and culture, (d) activity, and (e) community or the shared issues and concerns of the people involved, in order to recognize and explicate a wider set of situational aspects than spatiality alone.

To summarize, the person-situation debate mainly discuss the possibilities of including the mutual influence of situation and person in the social sciences, in that the one is not conceivable without including the other because persons and situations are entwined in the actual world. Although the importance of including situations in research is no longer under discussion, how to do so is still under discussion because it is complex to realize in it research studies.

### **The Influence of Situations versus the Nature of Situations**

The short literature overview of the previous section shows that research on the mutual influence of situation and person depends on the theoretical point of view regarding the features of human functioning in situations (i.e., behavior, personality, agency, and mind) rather than investigating the nature of situation in the sense of studying the features of situation across time in relation to human interpretation and reaction (i.e., ranging from complying via adapting to redirecting). In this section, a summary of three theoretical texts regarding person interpretation of situation is presented with the aim to obtain a better understanding of what might be the features of situation and what makes it difficult to discover the nature of the situation. The three texts were selected because they provide the basic theoretical foundation for most of the research in the literature review of the previous section. The first textual summary is taken from Mischel and Shoda (2010, pp. 149-150) and it primarily involves the dynamical interaction and reciprocal influence between the mind’s adaptation to the situation and the plasticity of the mind regarding the construing of interpretations of the situation, which is further complicated by the individual differences in accessibility and flexibility.

How does the mind work as people attempt to adapt to diverse situations? Because such adaptability and the ability to discriminate even among subtle different situations is essential for survival, humans could not have evolved to behave consistently across situations that vary in the challenges they pose and the solutions they require without a vast capacity for learning. People learn to not only associate old stimuli to new outcomes, but also learn to selectively tune into certain aspects of stimuli and form new functional equivalence classes with increasingly fine distinctions. People make meaning out of the

situations they encounter and use this to adapt their behavior (what they think, feel, and do) according to each situation. Not all individuals give the same meaning to a situation because of their individual learning history, their culture, and perhaps their unique genetic makeup. They behave in ways that are consistent with the meaning that particular situations have for them: Individual differences arise from the distinctive ways that the person processes and understands situations or context, which in turn reflects the individual's psychosocial and biological history. In short, as an alternative to the classic personality model, a constructivist, dynamic, contextualized view needs to account for the situated person as a meaning-maker whose construal and interpretation of the situation leads to patterns of variability that can be observed in behavior.

The situational person view includes that (a) the situational features activate cognitive-affective-social processing system for the mind based on prior experiences with those features, (b) the individual's system is sensitized to particular features of situations, (c) individuals are characterized by distinctive and stable *if . . . then . . .* or situation-behavior signatures (e.g., being warm and friendly if ...), and (d) psychological features. This means that the features of situations are encountered in the external environment, but they are also generated in thought, planning, fantasy, and imagination and they include moods and the everyday stream of experience and feeling. Situations include nominal situations (i.e., the particular place and activities in the particular setting – e.g. meeting in the dean's office) and the active ingredients or psychological features (e.g., having your ideas rejected). Once the specific feature of the situation to which the individual is responding is identified, personality and prediction to other situations becomes possible, but it is not only the external situation that triggers or activates the person's processing dynamics, they are also generated internally within the personality system.

The second textual summary regarding the influence of person in situation is taken from Ross and Nisbett (2011, Chapter 1.1) and it expressly points out the difficulties of including person situatedness in research studies. In the social sciences, situation involves the complex dynamics of social systems that can lead to pronouncing (i.e., what is likely to exist), obscuring (i.e., what is difficult to found), and misinterpreting (i.e., what is failed to realize) in the individual person.

The experience of serious graduate students likely will lead to challenging their views of human behavior and society. But ironically, their new insights will tend to make them less certain about predicting social behavior. Social psychology rivals philosophy in its ability to teach people that they do not truly understand the nature of the world. This book tells us about the human condition.

*The weaknesses of individual differences.* Even scientists who are most concerned with assessing individual differences in personality would concede that our ability to predict how particular people will respond in particular situations is very limited. Neither the professional nor the layperson can predict behavior well regarding a new situation, although they might believe that it can be done based on their everyday experience.

*The power of situations.* Pick a generic situation, then identify and manipulate a situational or contextual variable that intuition or past research leads you to believe will make a difference, and see what happens. Sometimes, of course, you will be wrong and your manipulation won't work. But often the situational variable makes quite a bit of difference. Occasionally, in fact, it makes nearly all the difference, and information about traits and individual differences that other people thought all-important proves all but trivial. Such empirical parables illustrate the power of particular situational features and the power of situations in general.

*The subtlety of situations.* Not all situational factors prove to be powerful determinants of behavior, not even those that seem intuitively strong. Both in the real world and in experiments, situational factors and manipulations sometimes prove to be surprisingly

small or nonexistent. What we have learned is that situational effects can sometimes be far different from what our institutions, or theories, or existing psychological literature tells us they should be.

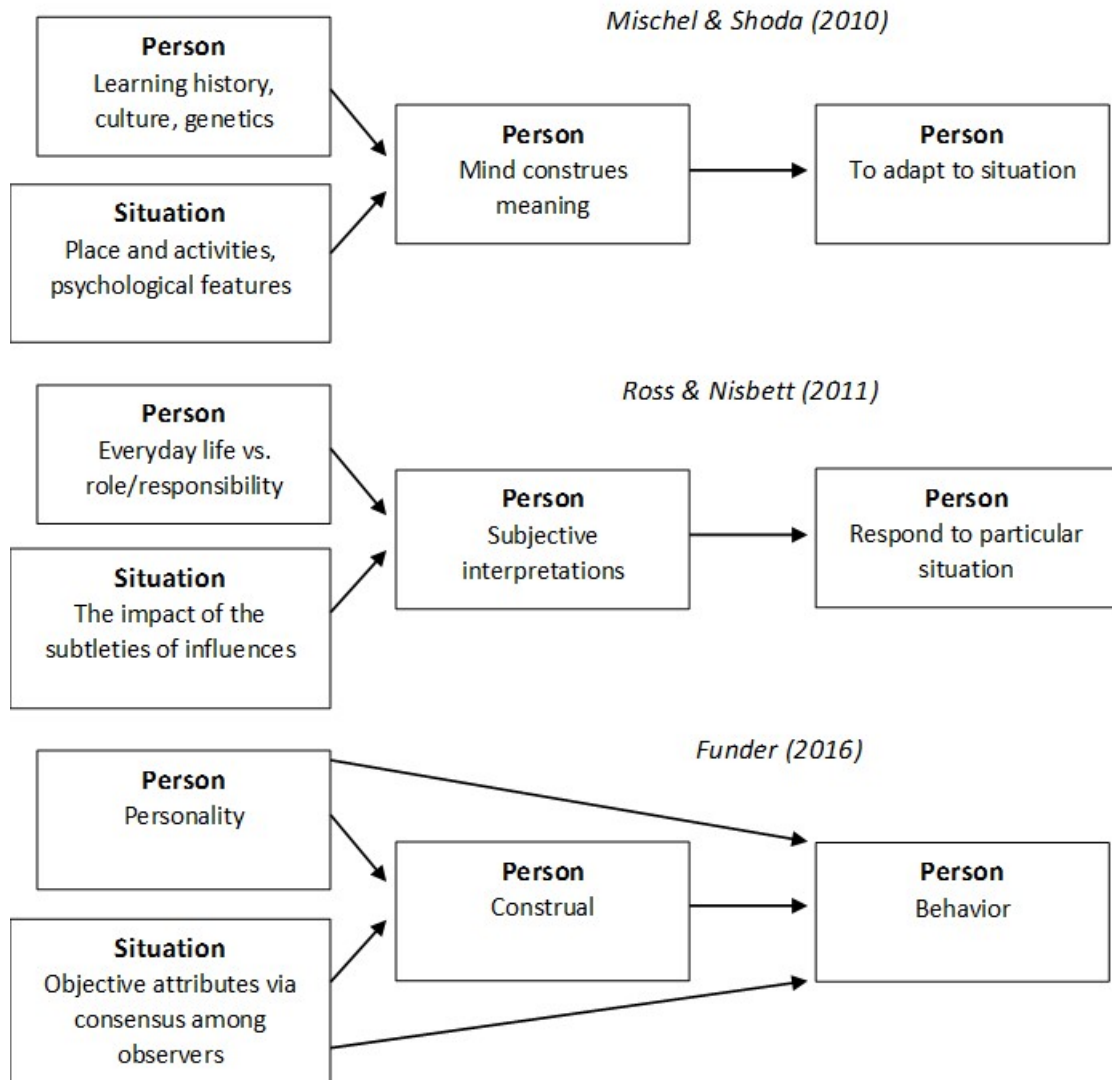
*Situationism.* The main points are that the (social) context creates potent forces that produce or constrain behavior, minor details of the situation can be important, the person construes the situation, and both individual and collective psyches (often based on beliefs) create situational states of equilibrium and tension, which will affect if change will occur.

The third textual summary on influence of person in situation is taken from Funder (2016, pp. 203-204), who studies the interaction between person and situation via behavior, but with the explicit wish to understand the psychology of situations (i.e., a term coined by Mischel and further employed by Ross and Nisbett).

The many accomplishments of social psychology do not include the development of a systematic psychology of situations, because that was never really its goal in the first place. As soon as one begins to consider situations worthy of study in their own right, one confronts a difficult conceptual question, namely where do situations exist: in the eye of the beholder, or as objective reality? The question arises because psychological consequences of situations are inevitably filtered through the perceptions of the people who experience them. As one researcher pointed out, a classification of situations will have to be in terms of the individual's phenomenology, not that of the investigator. While this point of view has merits, it can be taken too far. In its extreme form, the idea that everyone has a unique construal of every situation is directly contradicted by the vast literature of experimental social psychology. To view situations as residing solely in the eye of the beholder also raises the problem of losing the essence of situations (it becomes the study of personality) and it opens the risk of circularity. Thus, situations must be conceptualized separately from individual construals. This is not to say that psychological situations can exist apart from the humans who experience them. The "objective" nature of situations, like the objectivity of anything else, can be defined only in terms of the consensus, as opposed to the discordances, among socially competent observers. *Note:* The exact nature of "objective" reality is a fraught philosophical issue that will not be resolved in this article; for purposes of empirical research, the consensus of competent observers provides a practical definition.

These three textual summaries on the influence of person on situation are in agreement with one another in terms of pointing out that situatedness faces the problem of being both an individual construction and a methodological problem. The three textual summaries also illustrate the complexity of the person-situation entwinement and the authors attempt to condense the multitude of person-situation features and relationships by narrowing it down to a few distinctive concepts. That is, Mischel and Shoda connect situation to the adaptation of the mind, Ross and Nisbett connect situation to subjective, essentially social interpretation, and Funder connects behavior to the objective situation. They also differ in the concept of person, which is the history, culture, and genetics for Mischel and Shoda, daily life versus roles and responsibility for Ross and Nisbett, and personality for Funder. Figure 1 illustrates these main concepts of the influence of person on situation as described in the three summaries. A first glance at Figure 1 shows that there are far less concepts of situation than there are regarding person: situation is clearly a property of the individual person. For example, situation in Figure 1 has few features compared to the features of kinds of situation as described by (a) Barsalou (2016), who distinguished

between local versus global, exemplar versus abstract, inference across domains, and subjective reality and (b) Rauthmann et al. (2014), who distinguished between duty, intellect, adversity, mating, positivity, negativity, deception, and sociality. Additionally, Bressa et al. (2021) distinguished space or the physical environment from place or the local identity, history, and culture present within situation.



*Figure 1.* Schematic illustration of the influence of situation as described in three major theories.

However, even an objective concept as the physical place may be intrinsically entwined with person. For example, Hünefeldt and Schlitte (2018, pp. 8-10), who define place as the spatial-topological context, wrote: “Situativeness and place implies not only the distinction between place defined in terms of that what is or may be situated in it and place defined in terms of its relation to other places, but also the distinction between a particular place in the world and the all-encompassing place of the world. The concepts of situatedness and place are thus necessarily related to the

concept of the world (e.g., real versus represented world, own versus other's world, and subjective versus objective world) . . . Accordingly, all those distinctions concerning the concepts of situatedness and place which are eventually based on the distinction between different kinds of worlds rely at least implicitly on reference to some concept of mind." To summarize, the dynamical external world apparently cannot be seen, observed, and studied without including its dependency to the person, the human mind, and subjective perspective.

The entwinement between person and situation as described in the three texts and the research overview can raise the question of whether humans can observe the nature of situation. A first point regarding this question is that research that involves situation relies on a multitude of theories, primarily from the disciplines of personality and social psychology, to ground their reasoning, but these theories may not rely on research that was intentionally designed to study situation. For example, there have been studies on cross-situational consistency as the basis of personality (behavioral) dispositions (Barker & Schoggen, 1973; Mischel & Shoda, 1995), but the results were typically discouraging regarding the obtained correlational coefficients and because they merely provided for broad tendencies. Moreover, the authors of the three texts made a specific feature of situation prominent in their texts (i.e., the situational psychological features of Mischel and Shoda, the impact of the subtleties of situational influences of Ross and Nisbett, and the objective attributes of situation obtained via consensus among observers of Funder). The problem with emphasizing a specific feature of situation is that it directs the research and thereby the data interpretation. For example, Mischel and Shoda's situational psychological features and Ross and Nisbett's impact of the subtleties of situational influences emphasizes already the possible individual person and the personal construals and interpretations of situation rather than the situation itself. The objective attributes of situation defined as those attributes that people agree on can produce a more reliable description of the situation in itself, but it still excludes the physical environment and how it changes across time. Hence, studying situation as the influence of person-situation entwinement is not similar to examining the nature of situation because the person-interpretation of situation is highlighted in the theory.

Another point regarding the question of whether humans can observe the nature of situation is the connection of situation to the concept of time in terms of the gap in time between situation occurrence, interpretation, and reaction or action. This gap emphasizes the shift from situation to the mind of the person (i.e., the unique personality characteristics in relation to the process of constructing the situation in the mind) rather than the continuation of the situation itself. This emphasizing of the mind has two consequences. First, the individual differences in mental processing (i.e., the cognitive-affective-social processing system of the mind: Mischel & Shoda, 2010). When the mind goes from situation interpretation to action, it requires time in terms of engaging in the mental processes of sensing, attending, memory searching, making connections, rethinking the connections, and deciding what to do. In the meantime, the situation has further developed, which can lead, for instance, to a change of heart when the person is actually acting (e.g., spur of the moment decisions). Hence, as time goes on, the situation changes, and persons will differ regarding the time required to mentally process this changing situation. Second, the individual differences in learning (i.e., construction of knowledge and experiences), history, socio-cultural background, and genetic-biological disposition. These background and dispositional variables are possibly so intrinsically entwined and deeply buried within someone's

personality that it might be difficult for a person to interpret them completely, which complicates its assessment in research studies. Furthermore, although behavioral settings (Barker & Associates, 1978) and knowledge (Van Velzen, 2022b), where they concern socially and culturally agreed upon information, can reduce the amount of variability in personal background and dispositions, the variability of plausible relationships is likely to be large (i.e., which might explain the obtained low correlations in person-situation research). Overall, the variability in individual interpretations of the situation in relation to reaction can produce an unsolvable puzzle because too many variables can play a role in the time it takes to go from situation interpretation to action while the situation continues to evolve.

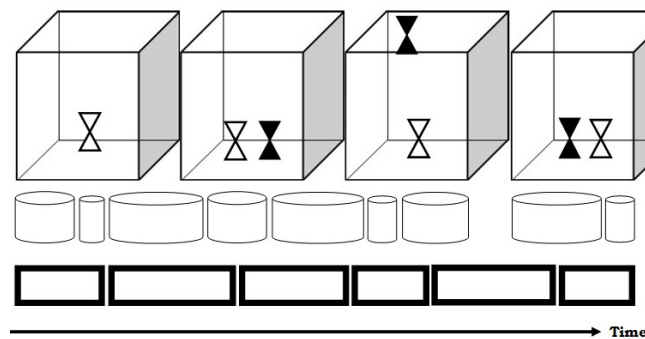
To conclude, defining situation as entwined with the person, which emphasizes that situation is always a human interpretation and has to reckon with the individuality of the person, is not similar to defining the nature of situation. Of course, to study situation by departing from the nature of situation as an actual-world construct can raise the question of how to frame the nature of situation with regard to the distinctive perspectives of the objectivist, realist, and subjectivist approaches to scientific research. Employing a certain scientific perspective can give clarity about the methodological conditions of a research study and the consequences regarding data interpretation. However, considering that currently the social sciences make use of all three scientific perspectives in conducting research, choosing a scientific perspective has its problems, as was pointed out by Funder (2016) in the third textual summary. The essential problem is that we do not know whether the world is objective, realistic, or subjective (e.g., see Hünefeldt & Schlitte, 2018, for a discussion). In my opinion, researchers do their best to include the nature of the actual world, situation, and situatedness in research studies, but we need a better definition of the nature of situation to understand what it means to include situation in research studies. Such a definition of the nature of situation goes beyond the situational features that make up human situation interpretation (Barsalou, 2016; Rauthmann et al. (2014), in that it captures the situation as a series of moments in time so that an affair unfolds itself. In the next section, I will attempt to explore what such a description of the nature of situation might entail by unraveling what situation encompasses in the relatively short timeframe of the average empirical data-collection session in research studies (see also Van Velzen, forthcoming).

### **The Data-Collection Session: As Time goes on, so do Situation and Person**

The question that forms the backbone of this section is “When we imagine the average empirical data-collection session in the social sciences, what does this tell us about the nature of situation as independent of human interpretation?” To answer this question, first, the average data-collection session is defined, next, the foundations of situation are analyzed to obtain preliminary definitions and, finally, the justification of the situational foundations is discussed via the research literature.

Data collection in the social sciences varies enormously (see Haydam & Steenkamp, 2020, for an overview) because of the range of possibilities regarding the kinds of research (i.e., fundamental and applied and exploratory and confirmatory), design (i.e., non-, quasi-, and experimental), data (i.e., quantitative, qualitative, and mixed), and instruments (i.e., observation, questions regarding beliefs and inferences, and tasks). Examples of data-collection sessions are participant task solving and engaging in interview either individually or in groups, participant behavior observed in

either laboratory or natural environment also individually or in groups, and participant responding to surveys. Although empirical data collection follows predefined criteria (i.e., ethical and methodological procedures) to answer the research question, in this article the focus is on the average empirical data-collection session defined in its simplest form of one participant in the situations of entering, introducing, performing, and closing (see Figure 2). Entering is the arrival of the participant at a certain location or room in a research institute. Introducing is the experimenter's explanations about the task to the participant, which can consist of explaining the aim of the research, explaining task content, and giving no direct explanations whatsoever. Performing refers to the participant's actual actions for data collection purposes, such as understanding, planning, and solving the task. Closing involves the ending of the data-collection session by, for example, the experimenter explaining to the participant what will happen with the data and discussing the results with the participant, and the participant who is saying goodbye.



*Figure 2.* A schematic illustration of four demarcated situations as encountered by one person.

Figure 2 shows that the four situations of entering, introducing, performing, and closing are represented as four separate cubes, each of which is the situation as encountered by *one person*. The selection of the shape of a cube to represent the situation is arbitrary, but it does neatly provide for a demarcation when there is more than one situation. The elapsing of time in the four cubes goes from the left-side of the cube to the right side, in that the *timeline* (i.e., the continuing arrow at the bottom of the picture) is not demarcated by timescales (i.e., timescales could also have been illustrated by slicing up the cubes as in Figure 3, but this would have blurred the front view of the cubes in Figure 2). Regarding situation analysis, each cube in Figure 2 represents a specific *situation* (i.e., entering, introducing, performing, and closing) in the *location* of the data-collection room, and the *context* or the overall essential meaning of what is happening is the collecting of data for scientific purposes. The four cubes have some open space between them to illustrate that the four situations are demarcated in the sense of representing a fictive (i.e., methodologically assumed) subdivision in the collecting of data. In the first cube, there is one participant (i.e., the white cone centered at the bottom of the cube that indicates its presence all through the situation) in the situation of entering, which involves the usual *events* of arriving (e.g., coming through the door, hanging up one's coat, and sitting down to await what will happen next). In the second cube, the experimenter (i.e., the black cone) enters

the data-collection situation (i.e., as seen through the eyes of the participant) to introduce the research (e.g., state its purpose and explain the task), which can involve a series of events, such as having a conversation and presenting the task. Both cones are placed at the same level because each has a role to play throughout the entire situation. In the third cube, the white cone is standing in the center to illustrate participant performance throughout the situation, while the black cone is in upper-left corner to illustrate that, although the experimenter may not be actually present in the room, there is some kind of observation related to the experimenter (i.e., as felt by the participant) via either actual observation devices, such as a camera, or the task results. In the fourth cube, both cones are again at the same level and centered, although switched in comparison to the second cube, because the participant is in the process of leaving the data-collection session.

Although the four demarcated situations of the data-collection session can be considered as relatively common or “objective” situations, the demarcation into four situations may not be obvious to the participant. As aforementioned, situations are made up of a series of events, and the participant can observe different events due to (a) the physical-spatial position in the data-collection room, which provides for a certain *perspective* or the features that are visible, and (b) their *focus* or interest in specific features of the event in relation to their personal characteristics (i.e., subjective historic-cultural background and genetic-biological dispositions or broad tendencies present in the brain as personalized knowledge, and mental functioning regarding feelings, reasoning, and learning). In other words, the focus of the participant can differ from, for instance, the focus of the experimenter, which is illustrated in Figure 2 by the circular boxes and bold rectangles that are placed underneath the cubes. The meaning of the concept of focus is that it gives individuals a choice in their observation in terms of relating what they choose to observe to their knowledge, memories, feelings, and thoughts.

First, the circular boxes represent the individual or personal observation of events in terms of the intensity of observing certain features of the events. For example, you may watch a TV commercial for the first time and become intensely focused on what exactly is happening to something or someone because, for some reason, it captures your complete attention and it feels as if time becomes prolonged so you can take up every detail. When you watch this TV commercial for a second time, you are likely to have less intensity in observing it because you already know what is coming. Similarly, a specific feature in an event can attract an intensive engaging with how this feature continues to evolve through time, in that the intense observation captures all details of what is happening. The selection of features for intense observations comes forth from the process of knowing or the mind bringing together that which the senses have noticed and what the brain has stored as knowledge and memories in relation to present feelings and thoughts (see Van Velzen, 2022b, for a discussion). Regarding Figure 2, through the eyes of the participant, the first three circular boxes regarding the situation of entering involve the aforementioned events of arriving, and because the waiting room is also the experimental room, its features trigger an intense preliminary viewing of the objects that are present as to get acquainted with research, then in a secondary viewing of the room certain features are observed intensely due to wondering about their function regarding the experiment and, finally, the hearing of voices behind the door leads to another intense observation of noises to prepare oneself for introducing oneself and memorizing the name of the experimenter. The next circular box regarding the situation of introducing that

consists of the event of having a conversation with the experimenter triggers in the participant only the intensity of observation regarding communication in terms of listening carefully, being sure that everything is completely understood, and taking in everything about what the experimenter says and does in an attempt to obtain hints about what is expected regarding task performance. The next two circular boxes regarding the situation of performing represent the events of not immediately beginning to act due to being uncertain about how to go about task execution as a result of intensely brooding about the expectations regarding the task performance, after which the participant begins to execute the task to the best of his or her ability until it is finished. The final two circular boxes regarding the situation of closing represent the events of talking to the experimenter about the data collection and saying goodbye (e.g., what happened during task execution and getting an idea about the correctness of the task performance) and actually leaving (e.g., taking one's coat and making sure of having collected one's possessions before walking out the door).

Second, the bold rectangles represent the individual or personal observation of events in terms of temporal window frames (Buehner, 2005) that mark the subjective beginning and ending of the events, which is based on the individual or personal knowing in relation to the changes in the features of the events as they evolve across time. The concept of temporal window frames (TWFs) ascribe a certain length of time to an event due to the presence of personally essential or attention attracting features of the event. In this sense, TWFs are closely related to the fact that bodily senses and mental processes require time for someone to observe and understand the surrounding world, and the intensity with which certain features are observed. Both TWFs and intensity of observation can bring the elapsing of time to an imaginary stop that is individually meaningful and useful for the mental processes of knowing what is happening and deciding on a reaction, in that it concerns personally perceived rather than a specified tempo of time (e.g., clock time). Regarding Figure 2, through the eyes of the participant, the first bold rectangle falls well within the borders of the first situation of entering, in that it captures the preliminary glance of the experimental room and wondering about the experiment as one event. The second bold rectangle involves the event that captures the voices behind the door and the entering and making acquaintances by the experimenter. The third bold rectangle represents the event of being informed about and preparing for task execution. The fourth bold rectangle is the execution of the task, in that the participant is now only focused on how to accomplish a satisfactory task performance. The fifth bold rectangle marks the event of the participant feeling uncertain about the task performance. The final bold rectangle refers to the event of ending the task and focusing on what will come next (i.e., leaving and mentally preparing for the next thing that is scheduled for that day).

If the intensity of observation and TWFs were referring to another person than the participant, such as the experimenter, then the circular boxes and bold rectangles in Figure 2 could have had different shapes, in that their content likely would deviate from that of the participant, although a certain degree of similarity in experiencing events in situations can be possible because of the interaction between experimenter and participant, being in the same location and context, and the demarcated character of the situation. Different persons experience the situation differently, which can change their *position* or their subjective interpretation of the situation and the stand they take within the situation. For example, the social structure regarding a situation can produce a certain meaning and expectations for all persons present, but for *a person* this can mean that a reinterpretation of the event is required in terms of

deciding on either complying to the expected reaction or producing an individual but appropriate reaction. For example, recurrent thoughts due to poignant or impressive personal and situational circumstances and cognitive editing (e.g., to adhere to socially agreed upon standards) can affect how someone will react in a certain event and situation. The concept of position gives individuals a choice in deciding on how to react (i.e., activities and behavior), which means that, for instance, personal identity can change to a certain degree as a function of situation interpretation.

To summarize, a person's perspective, focus, and position determine subjective observation and interpretation of objective events and situation, and both focus and position can become memorized experiences that are stored in long-term memory. The obtained terminology from this imaginary and demarcated context of a data-collection session, as a preliminary attempt to distinguish between the objective and subjective components regarding the functioning of situations, is presented in Table 1.

**Table 1**

*Definitions for the Nature of Situation in an Average Empirical Data-Collection Session*

<b>Components</b>	<b>Definition</b>
<i>Objective</i>	
Location	The physical-spatial and local surroundings (e.g., an area, an institution, and a laboratory room).
Context	The objective overall act that is taking place (e.g., a meeting, a conference, and the collecting of data).
Situation	The specific or definable (i.e., everyone is in agreement about it) happening or affair that takes place, in that certain features change.
Event	A series of specific or definable subsets (i.e., everyone is in agreement about it) that make up a situation.
Feature	The physical shape or appearance of the elements that make up situations and events (i.e., the objects, phenomena, and processes, such as furniture and people, temperature and light, and a conversation and taking a photo).
Moment	A precisely demarcated portion of or point in time (e.g., minute and day).
<i>Subjective</i>	
Perspective	The person's physical-spatial position in the location from which the situation is viewed and which will influence situational observation and interpretation.
Focus	Personal observation of the features in events and how they evolve across time by employing the intensity of observing certain features of events and TWFs, in that both are triggered and enabled by the brain and personal characteristics (i.e., subjective historical, cultural, and genetic-biological dispositions) and mental functioning.
Position	Personal interpretation of events and situations based on one's knowing (i.e., knowing which situational information refers to which knowledge and knowing which is the most useful knowledge at the present moment) in relation to social expectations (e.g., roles and responsibilities), to decide on reactions.

Table 1 provides the definitions of the objective components of situation that are independent of the definitions of the subjective components of person-situation entwinement. The components in Table 1 are in hierarchical order. Regarding the objective situation, the location has a certain context in which certain situations unfold, each consisting of a series of events with certain features at certain moments in time. Regarding the subjective person-situation entwinement, someone's situational subjective perspective influences the observation of the features in events, which are then interpreted to construct a situational scenario and decide on how to react. Some of the terms employed in Table 1 will require a further explanation. First, knowing is a process of the mind that is closely related to personalized knowledge, a term posited by Smolensky (1988), in that personalized knowledge refers to the connection between culturally formalized and personally experienced knowledge as it is established via learning in interaction with application. Personalized knowledge was further worked out by Van Velzen (2022b) as an actual-world phenomenon that requires the process of knowing by pointing out that the assessment of personalized knowledge, as it is stored in the brain, cannot be actually feasible without including the mind that selects and integrates certain parts of this stored knowledge to make it a coherent and useful whole of information as it is required for the present moment.

Second, circumstances are the conditions a person can be in due to the everyday stream of experiences, feelings, and thoughts, and these can play a role in interpretation or construal of the situation (Mischel & Shoda, 2010). Van Velzen (2020; 2021) distinguished between personal and situational circumstances (i.e., the near present-day experiences containing the hustle and bustle of daily life in relation to individual physical conditions, such as health, and thoughts and feelings regarding, for instance, family, friends, well-being, and eventful news reports). The definition of circumstances is the subjective person-situation specific near-present state and noticing of one's physical conditions, feelings, and thoughts that give meaning to the present situation. These circumstances are included (i.e., to a certain degree) in the experiences and knowledge that become stored in long-term memory. Because personal and situational circumstances are closely related to the near-present situation, they might explain personality characteristics that provide mostly for broad tendencies (e.g., the Big Five) rather than precise individual characteristics (see Wagner et al., 2020, for an overview). Personal and situational circumstances are based on research (Harris et al., 2016) that shows that personality characteristics change throughout life, in that stored experiences are reconstructed to a certain degree in connection to the present situation.

Third, the point of situatedness and location entwinement. Hünefeldt and Schlitte (2018, pp. 7-9) argued that "situatedness and place create a reciprocal relationship: situatedness implies something's being in some place and place implies the possibility of something's being somehow situated herein," which in fact refers to a difference in "real' versus 'represented' world, 'own' versus 'other's' world, and 'subjective' versus 'objective' world." What complicates matters further is that situatedness and location are dynamic in the sense of evolving across time. Hence, the individuality of the person is involved instantly in the beginning of a situation to result in an interpretation, and then from thereon it can further flavor the perceiving of the situation via the mind. In this article, situatedness is defined as the combination of all situational subjective components (i.e., perspective, focus, and position) that determine for a person how to perceive a situation in such a manner that it sustains a

coherent self-image and behavior in agreement with the demands of the situation.

Overall, the purpose of this section was to entangle the objective and subjective components of the nature of situation, and it was found that the objective situation has more components than the subjective person-situation entwinement has. The examples given to explain the objective and subjective components imply that the objective and subjective situation are both not a stable given because the situation and the person are continuously in the process of dynamically changing or evolving from one moment to the next moment. Because the objective situation is always in the process of dynamically changing across time, different outcomes of situation become feasible as time goes on within the range of the alternative possibilities of the components of the situation. This dynamical changing of situation can explain that different persons can have different situational interpretations, in that also the situation itself provides for a flexibility regarding what will happen in the actual world. In itself, the dynamical changing of the actual world can give rise to the possibility of several scenarios existing alongside one another dependent on the particular change that will come to play the main role in the situation as it evolves across time.

### **The Multi-Cube**

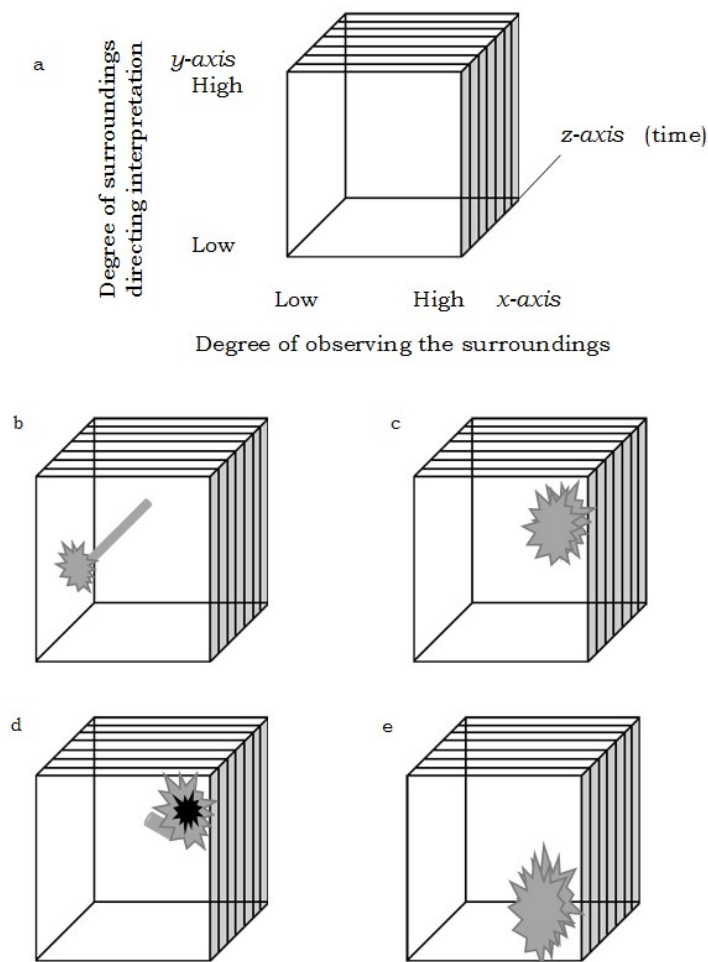
In the previous section, a simplified view of the nature of situation was employed by departing from one person, the participant's situational subjective perspective, focus, and position. If also the experimenter's situational subjective perspective, focus, and position had been described, then Figure 2 would have needed another row of four cubes with differently shaped circular boxes and bold rectangles to illustrate the experimenter's intensity of the observation and TWFs. Accordingly, we can now consider the nature of situation regarding a data-collection session that involves several participants, which raises some assumptions. First, it can be assumed that the objective situation can become more varied as a consequence of the situation including multiple situational subjective perspectives of person, in that the physical-spatial position of one person in a location can hide certain features from view. For example, a cupboard that is positioned as a room divider can block someone's view of the door, but when there are more persons present in the location, then some of them can be on the other side of the room divider and in view of the door. Another illustration is when several persons are standing around a concrete three-dimensional sculpture, in that each person has in view certain properties of the sculpture that can be different from some of the other persons.

Second, it can be assumed that the objective situation can become more variedly mentally manipulated when the multiple situational subjective focus and position of person is taken into account. The situational subjective focus and position of person are the consequence of the personal processes of the brain and mind (e.g., differences in personal characteristics, memorized experiences, and near-present circumstances) to decide on personally appropriate reactions in a situation. When there are several persons, it can become more obvious that the situational scenarios constructed by the persons can deviate from one person to the next person. This assumption raises the question of whether the agreement among people who participate in a situation can be a reliable measure of the objective situation.

Third, and this is what complicates the obtaining of an understanding of the nature of situation most profoundly, it can be assumed that the situational subjective perspective, focus, and position of several persons in a situation, who agree with one

another regarding the content of the objective situation, can then begin to redirect the situation to a certain degree towards an alternative future situation. This can be so because the future, which already begins within the process of the dynamical changing of the present objective situation, is open to some possibly alternative subjective situational scenarios. For example, if one participant begins to question the sensibility of performing the task that was set for the data collection, it may not have an effect on future situations unless the participant can seize the opportunity in collecting supporters. In the research literature (see Mason et al., 2007; Mousaïd et al., 2013 for an overview), this phenomenon is called social influence and the collective mind, and although it is not fully understood, it can influence the direction of future situations, such as creating a smart functioning organization and refusing to get vaccinated against influenza. Taken together, these three points regarding the possibility of observing the same situation from different points of view may seem like different people being in parallel but also slightly deviating situations because the objective situation includes a certain flexibility regarding the construction of scenarios that may and may not become the future situation. In this respect, Van Velzen (2022b) proposed three kinds of adaptive person responses to situational changes across time: (a) stable patterns showing a relatively steady continuation in situational subjective focus and position across time; (b) probing patterns showing a relatively systematically varying change in situational subjective focus and position by temporarily diverging and converging; and (c) abrupt patterns of change in situational subjective focus and position by showing a periodic burst in a relatively stable pattern that creates a completely new pattern.

This raises the question of how to visualize the cubes in Figure 2 to illustrate the dynamical complexity of objective situational flexibility when there are several persons present in the situation. Figure 3 presents several cubes to visualize the objective situation as encountered by four persons who are in the situation of performing in a data-collection session. The four persons are university students, who have to execute a task (e.g., solving a complex mathematics problem, writing an essay writing, and drawing an innovative household device) for data-collection purposes, and it takes place in the natural environment of the college classroom. Figure 3a presents the basic outline for each of the cubes in the figures 3b to 3e, in that it shows the objective situation as it evolves across time. The front view of the cube in Figure 3a represents the first event of receiving the task through the eyes of the person's situational subjective perspective or physical-spatial location in the college classroom, and the next slice represents the next event as encountered by the person's situational subjective perspective. Hence, each slice in the cube represents an event and its features as they appear in the situational subjective perspective of the person while the situation evolves in time. Please note that the front surface of the cube in Figure 3a is similar to the left-side surface of the cubes of Figure 2. In the cube of Figure 3a, the z-axis presents the timeline. The x-axis and y-axis present a qualitative measure of person situational subjective focus and position, respectively, because the definitions of focus and position in Table 1 have qualitative characteristics. The x-axis is defined as the situation as a function of situational subjective focus, in that it measures the degree of staying alert on to what is happening in one's surroundings (i.e., not to be confused with the intensity of observation, which refers to being completely immersed in observing certain features). The y-axis is defined as the situation as a function of situational subjective position, in that it measures the degree in which the surroundings direct the interpretation.



*Figure 3.* A schematic illustration of the differences in situatedness of four persons who are in the same objective situation.

Figure 3b shows the cube of the first student, who came to the college classroom with the expectation of doing the task well, and who became further reassured that the task could be performed well during the situation of introducing. The grey area in the front view of the cube illustrates the first event (e.g., receiving the task) and its relatively small surface shows that few features of the event receive attention because the student is relatively certain of doing the task well, in that the student mainly has eyes for the task. Regarding the x-axis, the spatial position of the grey area shows a relatively low degree of keeping an eye on the surroundings because the information regarding task execution was sufficient for this student to get to work. Regarding the y-axis, the spatial position of the grey area shows a relatively neutral degree of the surroundings directing the interpretation, in that the student has already made up his mind to focus on task execution. The grey beam in the following events illustrates a decrease of the grey area, in that the student remains to be less, but nevertheless still somewhat, attentive to the surroundings than during the initial

situational event. The grey beam arrives at the backside of the cube (i.e., final slice or event) at approximately the same situational subjective position as that of the grey area in the front slice of the cube, indicating a stable pattern of situational subjective observation and interpretation.

Figure 3c shows the cube of the second student, who came to the college classroom with several friends, and who did not really care about participating in an experiment. This student only participated because the friends did. Although the information provided by the experimenter in the previous situation of informing clarified the task sufficiently, and although the student was not specifically interested in performing well, the student did not want to deviate much from the task performance of the friends. The relatively large surface of the grey area in the cube illustrates the amount of features viewed by the student, the spatial position on the x-axis shows the relatively high degree of keeping an eye on the surroundings (e.g., particularly regarding what the friends are doing), and the spatial position on the y-axis shows that it matters what the friends are doing in terms of what the student will do. The grey area is followed by another grey area that lies at the right upper side of the first grey area instead of a grey beam, to indicate that the amount features and situational subjective focus and position stay the same or increase throughout the situation of performing. Overall, this cube indicates a probing pattern for situational subjective observation and interpretation.

Figure 3d shows the cube of the third student, who came to the college classroom while being rather excited about participating in an experiment, but who was also somewhat anxious regarding task execution and performance. The grey area in the cube includes a black area to illustrate the colliding feelings and thoughts regarding excitement versus anxiety, and it affects the grey area in terms of attending to a reasonable amount of objective situational features, as illustrated by the relatively large surface of the grey area. The degree of observing the surroundings is relatively high because of excitement (i.e., not wanting to miss anything) and anxiety (i.e., hoping to receive further information about task execution) and the degree of the surroundings directing interpretation is also relatively high for the same reasons. The grey beam indicates that during task execution the amount of features attended to decreases, and the more neutral point at the end of the situation of performing indicates that the degree of situational subjective focus and position have also decreased during task execution. Overall, this cube indicates an initially probing pattern regarding situational subjective observation and interpretation that turns into a stable pattern.

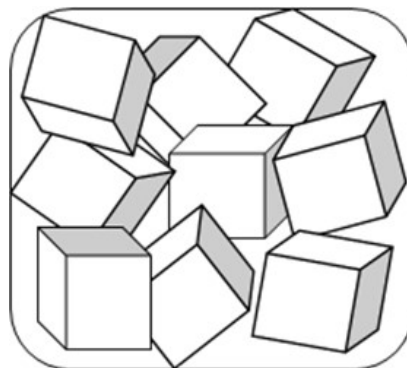
Figure 3e shows the cube of the fourth student, who came to the college classroom with some critical concerns about the usefulness of research experiments in general, and who had become further convinced about the plausible correctness of these concerns during the situation of introducing, but this student also wanted to make sure of not having misunderstood the purpose of this research experiment by giving the task execution the benefit of the doubt before establishing a definite point of view on experimental research. The relatively large surface of the grey area in the cube illustrates the attention of this student to a relatively large amount of features, and the double grey area indicates that this remained to be so during all task-execution events. The x-axis spatial position of the double grey areas indicates a relatively high degree of keeping an eye on the surroundings, and the y-axis spatial position indicates a relatively low to neutral degree (i.e., willingness to reconsider) of letting the surroundings direct one's interpretation. Overall, this cube indicates a probing pattern

regarding situational subjective observation and interpretation.

Furthermore, Figure 3 raises the question of how this illustration can further explain the concept of the relativity of the observer, in that the situational subjective perspective of person influences which of the objective features in a situation the person can include in observation and interpretation. The relativity of the observer can be illustrated by changing the angle of the cubes in Figure 3 as a result of individual differences in specific person situational subjective perspective regarding the objective situation. By including the definitions provided in Table 1, the relativity of the observer can have the following preliminary definition.

*The relativity of the observer means that a person's situational subjective perspective regarding the objective situation can affect the situational subjective focus and position, in that it can produce a different meaning or scenario than other persons have regarding the objective situation because only certain objects, phenomena, and processes alone and in combination can be picked up from all objects, phenomena, and processes that are present in that situation at that moment in time.*

This definition of the relativity of the observer refers to the differences in person situational subjective perspective as a result of their physical-spatial position in the location. For example, a simple objective situational feature, such as a window in the college classroom, can influence the students near the window, such as being able to look out of the window if the sporting game that is next on the schedule has already begun in terms of students walking to the gym. To illustrate the differences in situational subjective perspective and its influence on situational subjective focus and position when there are multiple persons in one and the same situation requires another kind of “cube” in the sense of a more rounded cube because it is filled with the cubes of all other persons present and that all have different angles or have been rotated to illustrate the intra-individual differences in situatedness regarding the same situation (see also Van Velzen, 2022a, for a discussion). Figure 4 presents this so-called multi-cube, which can include less and more cubes depending on the amount of persons it has to represent.



*Figure 4.* Schematic illustration of the relativity of observation regarding the differences in situatedness of multiple persons who are in the same objective situation.

Figure 4 shows multiple person situational subjective perspectives in relation to situational subjective focus and position in an approximately rounded cube to illustrate the relativity of the observer. The center cube in Figure 4 resembles the cubes that were presented in Figure 2 and Figure 3, in that the x-axis (i.e., at an angle of  $0^\circ$ ) is taken as the basis for one person's situational subjective perspective to observe and interpret the situation. The cubes that surround the central cube are rotated at different angles when their basis is compared to the center cube. It is not that these angles have a particular meaning because, for now, they merely illustrate that different situational subjective perspectives in relation to situational subjective focus and position can produce individual differences in situational scenarios regarding one and the same objective situation. Some of the cubes in the rounded overall cube overlap because (a) a person's situational subjective perspective can overlap with the situational subjective perspective of certain other persons and (b) a person can use knowledge to fill in the lack of information as a consequence of the situational subjective perspective (e.g., the aforementioned door behind the cupboard that was used as a room divider can be inferred if the person can hear the door opening and closing and can view the arrival of unfamiliar people in the room).

To conclude, a first preliminary attempt was made to define the nature of situation by distinguishing between the objective situation and the subjective person-situation entwinement based on an imagined, average, and demarcated view on situation. However, the major question that still remains is how the obtained definitions in this article relate theoretically to situation as it appears in the actual world and across time. The preliminary analysis presented in this article suggests that the objective situation and the entwinement with the subjective person require precise definitions in order to account for how situation and situatedness can dynamically evolve across time.

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