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Navigating the normativity of behaviour settings: an observational case study

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Traditionally, sensitivity to situational norms is understood as deriving from internal cognitive states that represent the rules for appropriate conduct. On an alternative view, norms are 'out there', in the practices and situations themselves, without being duplicated in the head. However, what does normativity look like when it is performed by people engaging with a concrete situation? A 'behaviour setting' offers a window onto these dynamics. This article presents an observational case study of normative coordination within a behaviour setting. Immersed in a scientific laboratory setting, the observations show how the normative demands of the overall behaviour setting can give shape to various places of action, or 'synomorphs', which invite the participants' activities. Responding to the different needs of each synomorph, in turn, maintains the behaviour setting. What connects these two reciprocal timescales of activity are the situationally sensitive activities of the participants. We end with several examples that bring such sensitivity to the interdependence of the norms of a behaviour setting to the fore.

This article is part of the theme issue 'People, places, things, and communities: expanding behaviour settings theory in the twenty-first century'.

1. Introduction

In our daily lives, we often find ourselves in situations where we have a direct sense of what the circumstances demand of us. For instance, when a student enters a classroom after the lesson has started, they try to make as little noise as possible and sits in the first available place, rather than looking for a more comfortable one. Actions unfold in the light of what is considered 'appropriate', manifesting a sense of normativity, which comes from a situated ability to distinguish better from worse, adequate from inadequate, in a particular situation [1,2].

Many theorists have tried to understand this sensitivity to situational norms as deriving from internal cognitive states that represent the rules for appropriate conduct (e.g. [3–5]). However, this is not the only theoretical option. On an alternative view, norms are 'out there', in the practices, the situations, the 'behaviour settings', and the contexts themselves, without being duplicated in the head. The situations we encounter provide opportunities for normative behaviour without mediation by mental states representing the situational norms [6,7]. Participants in such situations act appropriately by adapting to the normative structure in which they partake, thereby affirming, continuing and potentially reshaping that normativity. Consider again the student entering the classroom late. In their attempt to minimize disruption by silently finding the first available seat, the student is actively adapting to a normative situation that invites them to maintain silence. Simultaneously, by responding to the situation, their behaviour contributes to its continuation.

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The normative structure should therefore be understood not as pre-formed and pre-existing but as performed and maintained by the intricate fabric of social practices and material configurations to which we respond and contribute. That requires looking at the 'structure' differently, as an emerging product of situated action [8]. 'Behaviour settings' provide a window into this phenomenon. This article will report an observational exploration of a real-life behaviour setting, aimed at bringing the richness of this normative fabric of everyday life into view.

A 'behaviour setting', in fact, offers a prime example of the normative structure of the environment. It is a situation in which actions, places, and things are mutually interlocked in a systematic and predictable pattern. It is an extra-individual assembly of behaviour episodes, objects, and space that surrounds people [9,10]. Barker's [9] research found evidence to support the idea that the environment can be described in terms of these larger scale ecological units that influence behaviour in predictable ways. Behaviour settings imply that our daily environment is normatively specific, in that it is ordered to enable some activities while barring others [11].

A behaviour setting comprises one or more recurring patterns of behaviour interlocked with certain material arrangements, for example, objects, materials and spatial configurations, which, in Barker's terminology, are collectively referred to as 'milieu'. The 'essential fittingness' [9] between the milieu and the patterns of behaviour gives rise to 'synomorphic' relations, meaning that there is a tight reciprocity between the activities and the environment that constitutes the behaviour setting over time [9,12]. Thus, within a behaviour setting, activities are organized around functional units known as 'synomorphs', which we understand as *places of action*.

Consider again the case of the class. Both the desks and the chairs (milieu) and the listening students (behaviour) form a single synomorph, which in the context of a lesson is interdependent with another synomorph: the professor's desk (milieu) and the professor's teaching (behaviour). Synomorphs co-constitute the behaviour setting, but they are smaller and have distinct spatiotemporal boundaries within the larger behaviour setting. Within the setting, synomorphs are material configurations that each invite particular patterns of behaviour and not others. Behaviour settings can then be said to be normatively specific, while affording different actions in different places. However, how does this co-constituted specificity of material conditions and activity emerge and develop?

As originally conceived, behaviour settings are normatively specific because they implement a 'programme' that refers to the 'schedule of eco-behavioural occurrences' [9] that decide what the behaviour setting system does and forms the reason for its existence [13]. However, this perspective was criticized for presupposing what it sets out to explain [14]. Indeed, it takes for granted the development of the setting over time and the larger context in which the setting operates [11,13].

Recent developments in behaviour setting research foreground the temporal, dynamical, and historical dimensions of the behaviour setting, reconceptualizing them as self-generated and emergent from the confluence of multiple, reciprocal influences [12–16]. Instead of assuming that situational norms are pre-programmed, we build on this literature and explore how the normative specificity within a behaviour setting is performed.

In particular, in line with the results of the observations here reported, we understand the normative specificity as being made through the coordination of normatively distinct synomorphs. We consider the connection between the behaviour setting and its functional parts, the synomorphs, as a temporally reciprocal relationship ([17,18,19] for the main inspiration). To be precise: (i) the timescale across which a behaviour setting unfolds is larger than the timescales of the synomorphs within it, but nonetheless, (ii) these two timescales are reciprocally related. Consequently, both the behaviour setting and its synomorphs are temporally extended processes that are not determinate at a single moment in time but are interlocked and determine each other over time.

To understand the mutual constitution of the behaviour setting and its synomorphs, let us consider again the example of the classroom. The larger scale behaviour setting of the lesson enables the teacher to stand in front of the class and the students to learn. All the participants achieve the continuation of the lesson as a larger scale activity by responding to the small-scale parts of the behaviour setting: the students, responding to the chairs by sitting, and the teacher, using the chalk and the blackboard to explain a maths problem. For appropriate participation in the setting, then, an individual needs to develop a sensitivity for how continuing one scale of activity (students facing the blackboard, teacher using chalk) feeds into the other (the lesson as a whole), such that both can keep going. By keeping the synomorphs separate, the larger scale behaviour setting maintains its normative specificity. Despite the differences in the behavioural requirements of the teacher or a student, each participant is part of the larger setting and shares its overall normativity.

This study is an observational exploration of what normative coordination looks like and what kinds of phenomena show up when adopting a temporalized and performative perspective on behaviour settings. The observational case study reported was conducted in a laboratory of a behavioural science department in Western Europe for a period of three weeks. One of the authors (G.D.R.) followed the activities unfolding in the laboratory as researchers conducted their experiment. The researchers aimed to understand the learning dynamics of using a prosthetic hand through the training of the relevant motor skills using virtual reality (VR). Through immersion in the behaviour setting of the scientific laboratory, we aimed to show how the normative specificity of this behaviour setting was made and coordinated over time.

2. Methods

Over the course of a three-week study, G.D.R. observed the activities of a team of three researchers (R.M., C.K., and R.T.) in a behavioural science laboratory. The observations took place while the group was collecting data. The project in which the researchers were involved had two different experimental set-ups in the laboratory, one of which made use of VR to train motor skills. For this article, we focussed on VR data collection which consisted of seven 'training sessions', during which the researchers collected data that captured the players' improvements in controlling a virtual prosthetic hand.

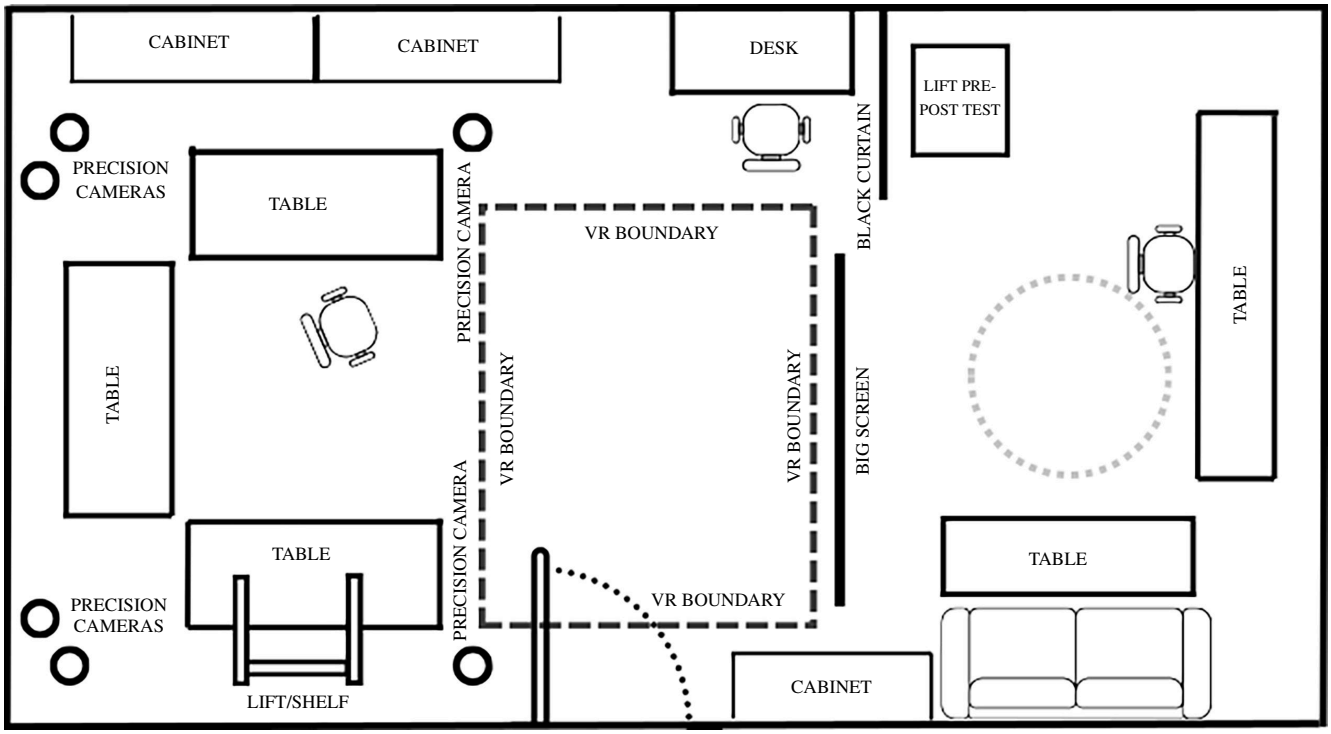

Figure 1. A layout of the laboratory (see main text for details).

(a) The setting

The data collection took place in a laboratory room. It featured three large tables arranged in a horseshoe, a blue lift that was supposed to act like a shelf during other experiments, an old coffee machine and six precision cameras that surrounded the non-VR experimental space (figure 1, left-hand side). There were also two cabinets for storing materials and components, a desk with a chair and a few wall sockets.

In the middle of the room is an open area, to the right of which hung a large screen, used for the VR set-up to broadcast the game and a black curtain, positioned next to the desk and chair. The screen and the curtain created a narrow passage and a clear demarcation of the laboratory's space into another area (figure 1, right-hand side). In this area, there were two large tables, a sofa and a rotating platform from a previous experiment, a chair, a table lift, and various experimental objects, chargers, personal belongings and instruments from other experiments are scattered around.

The VR set-up primarily involved a VR game, created by a company that specialized in creating immersive VR scenarios for healthcare professionals. The player would use myoelectric signals from their forearms to control a simulated virtual prosthetic hand during a VR game. We will call this apparatus the 'control system' (for more on the technical details of such a system, e.g. [20]). The task of the game was to make drinks for the clients of a coffee place.

(b) Participants

The participants we observed in this study were C.K., a postdoc; R.M., a research assistant and master's student; and R.T., a PhD candidate. These researchers were first approached through the project's principal investigator, A.O.—who occasionally was part of the observations—while the main informant during the whole study was R.M. All of them were part of the same department. During the observations, the experimenters trained and measured three subjects: S.N., I.K. and M.M., who were also participants in the observation study. The subjects were PhD students or employees from the department. In the reports, we will refer to all people involved in the study as 'participants'; C.K., R.M. and R.T. will be called either 'researchers' or 'experimenters'; and M.M., S.N. and I.K., 'subjects'. Each participant provided an informed consent. We obtained ethical clearance from the Ethical Committee for the Social Sciences and Humanities at the University of Antwerp.

(c) Materials and procedure

During the training sessions in the laboratory, G.D.R. made video recordings and took notes of what she observed. Outside the laboratory, she also took notes of anything relevant to the study. G.D.R. had unrestricted access to all aspects of the laboratory setting, with both experimenters and subjects aware of G.D.R.'s presence during the activities.

(d) Analysis

The data analysis proceeded first through the identification and description of the functional units, the synomorphs, of the behaviour setting through the video analysis of the experimental sessions. By observing the recurrent patterns of action, the

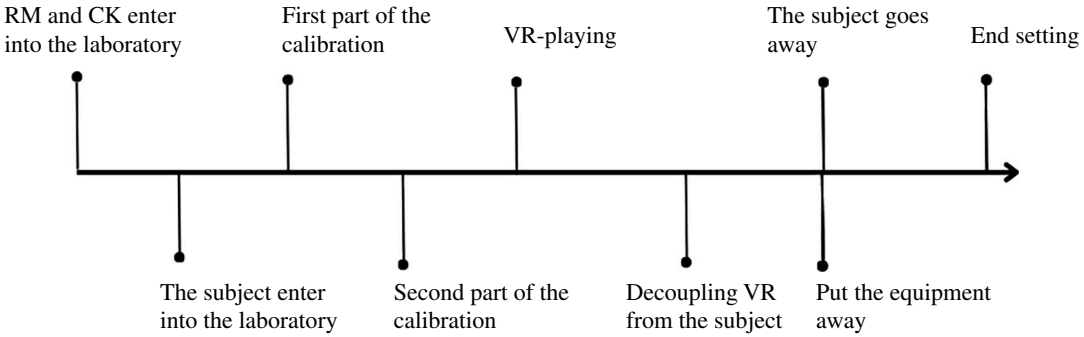

Figure 2. The temporal unfolding of the behaviour setting.

positioning of the participants and the articulation of the flow of activity and their fittingness with the materials and the milieu, four synomorphs were identified. Then, through the repeated analysis of the recorded situations, in a back and forth between the observations and behaviour setting literature, we specifically looked for situations where participants demonstrated sensitivity to the normative specificity of the behaviour setting's synomorphs. These episodes were then transcribed verbatim by G.D.R., and in subsequent discussions with L.v.D. and E.M., refined to develop descriptions of the situation rich enough to capture the normative engagements within the behaviour setting over time. In addition, presenting our final descriptions to the participants provided opportunities to clarify and enhance our interpretations. With their approval, these descriptions have been integrated into the following sections (all descriptions appear in italics).

3. Results and discussion

Our study aimed to investigate how the normative specificity of a behaviour setting is performed by coordinating synomorphs. In this section, we will start by providing an overview of how behaviour unfolds within the experimental laboratory setting. We will identify various 'places for action', the synomorphs, within the laboratory that consistently draw or invite participants into particular behaviours. We will look at these synomorphs in detail: describing how the material structuring invited different participants at different points in time to perform similar behaviour, thus maintaining the unfolding of the behaviour setting. Finally, we will explore the activities of the participants who held together the meshing between the larger behaviour setting and their smaller scale synomorphs.

(a) The laboratory as setting up behaviour

The first step in the analysis of the behaviour setting was to recognize the recurrent and identifiable 'standing patterns of behaviour' of the laboratory during the experimental sessions, as shown in figure 2. Below is a brief description of the events:

> *Everything is quite organized. After three weeks it is possible to almost see the boundaries between one pattern of activity and another. Before the experiment begins, C.K. and R.M. (usually) enter the laboratory, leave their jackets and backpacks on the table behind the screen, and then begin to arrange all the various instruments they will have to use, and there is a lot to prepare as the experiment is divided into different phases. They turn on computers, open windows and the door, connect devices, exchange a few words about who will do what, and R.M., moving carefully with the equipment in his arms, brings various components of the control system onto the black table in front of the screen. Then the subjects arrive and after they have also put away their backpacks and jackets, they remain in front of the screen waiting for the different devices to be placed on them.*
>
> *As the preparation for the experiment begins, the atmosphere changes. The calibration phase is initially a delicate process of aligning the subject's right arm musculature to the control system, and then, the newly assembled coupling needs to be aligned with the avatar carefully. The VR environment moreover needs to be aligned with a physical area circumscribed by the blue tape on the floor of the laboratory (the playing field). Only there the subject will be able to move freely and play. When the experiment begins, R.M. and C.K. position themselves outside this area: R.M. next to the door and C.K. at a black table with a chair. From there, the experimenters are ready to follow the subjects' performance, to take notes of mistakes during play, and to make sure the subjects do not get hurt. After 40 min the training ends, the subjects look at their scores, while C.K. and R.M. remove all the various components from their body and bring the equipment back to storage, pack the laptop in their backpacks, grab their personal belongings, turn off the lights and close the laboratory.*

This description shows that over time, in a smooth coordination between materials, researchers and subjects, an experiment unfolds. Despite differences in the details—different subjects, different jackets and different training experience—there is a 'standing pattern of behaviour' that recurs across participants (subjects and researchers).

(b) Identifying synomorphs

By zooming in on the behaviour setting, we can notice smaller scale patterns of activities unfolding over time (figure 3) and coupled to particular places (figure 4). We have called these places of action 'synomorphs'. From the perspective of the behaviour setting that we have introduced, it is the standing pattern of behaviour of the laboratory experiment that organized the material environment into synomorphs. In turn, the synomorphs organized the participants' activities by inviting them to

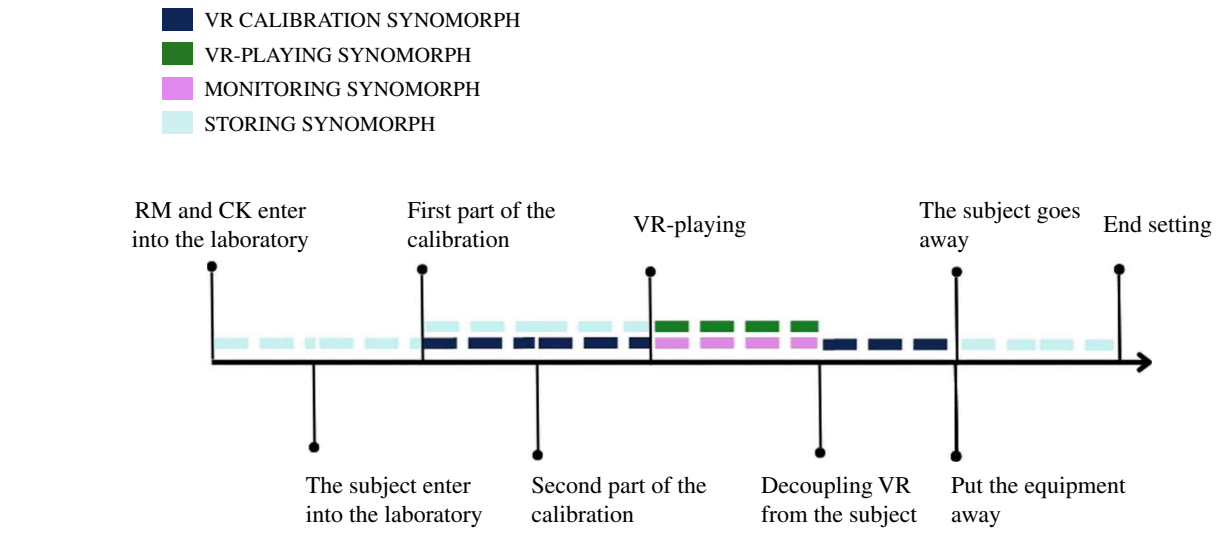

Figure 3. The temporal unfolding of the behaviour setting, with the smaller scale synomorphs represented by different colours.

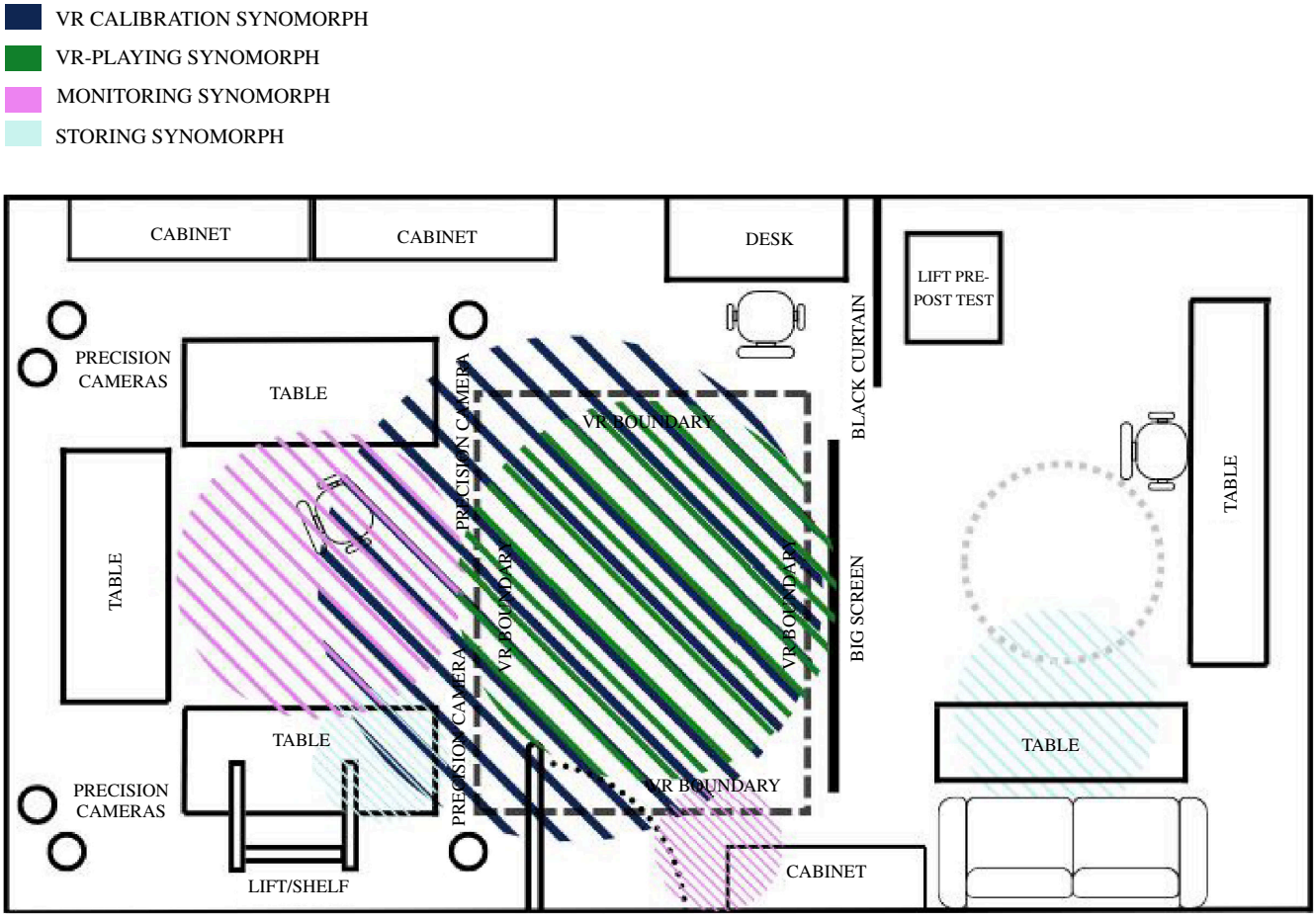

Figure 4. The layout of the laboratory with the four synomorphs superimposed.

maintain the setting. To bring this organizing role of the material environment into view, let us zoom in on the synomorphs we identified within the behaviour setting (figure 4).

(i) The storing synomorph

We saw that all the participants in the setting would always put their jackets and backpacks in the same place (figure 5). Tucked away behind the screen, out of sight of the subject, was a table without a chair to sit by (figure 4 in light blue). The long end of the table faced those who approach—affording easy access to the table's surface and under it. This material organization was the first dedicated place for action, by inviting similar behaviour from different participants:

> *Before the experiment starts, R.M. needs to get rid of his jacket and backpack. The large open space under the tabletop offers the opportunity to do so, inviting R.M. to leave his personal belongings there. With R.M.'s jacket there, and R.M. telling M.M. at the beginning of the first training session to put*

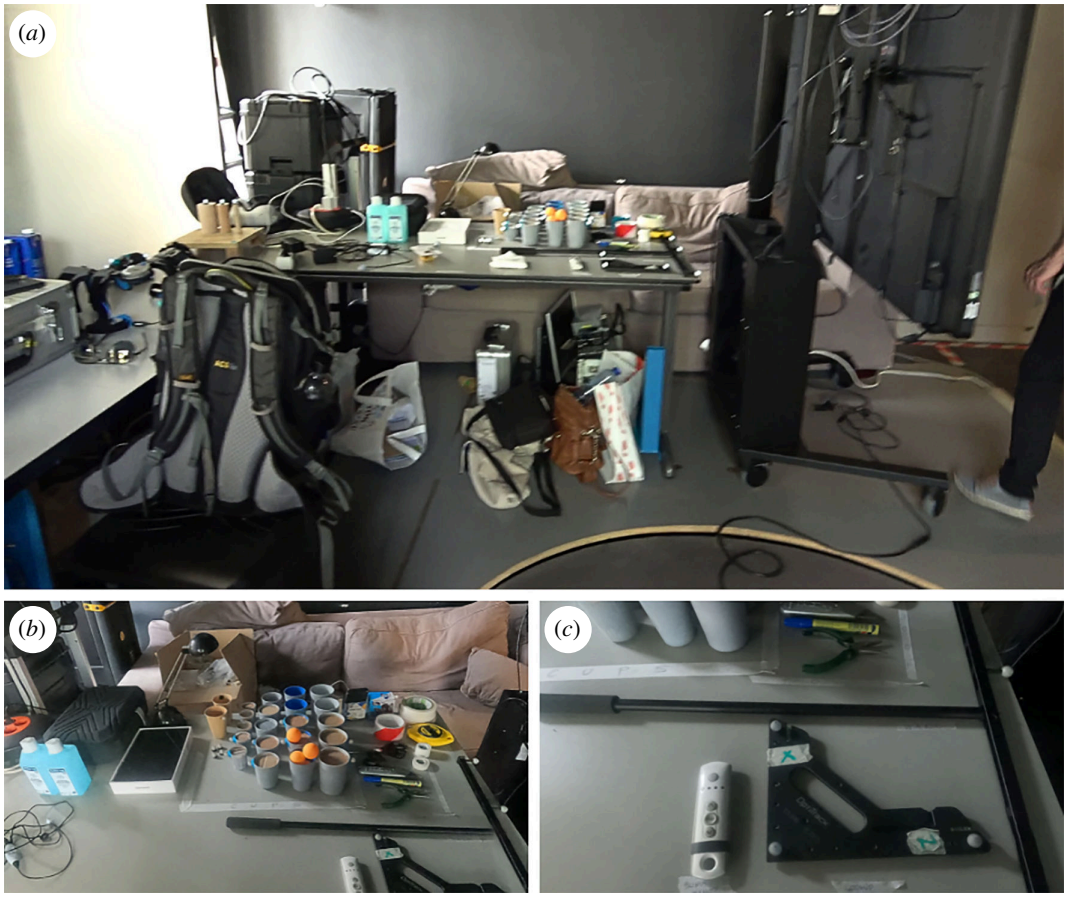

Figure 5. Pictures of the storing synomorph. (*a*) shows an overview of the place for action, while (*b*) and (*c*) show how the materials were labelled and placed in their appropriate space.

> *her things there, M.M. and I, one after another, are drawn towards the table to leave our backpacks, jackets, and a camera bag under the table before the start of the session.*

And so for all three weeks of study, the same table—repeatedly and consistently—offered a perfect spot to keep temporally irrelevant things at bay. The normative pattern of action—that of keeping things tidy—was not afforded everywhere in the laboratory, not in the main area, not on the tables as shown in figure 1, but only in this particular space. There was an 'essential fittingness' between the particular position of the table, its material configuration and the pattern of behaviour. However, the same material arrangement offered another form of behaviour:

> *The tabletop, with the experimental materials neatly labelled, invites C.K. to get the materials he needs for the calibration and the experiment itself. When the controller breaks down during the training session, the situation invites R.M. to turn immediately to the table in search of another pair of controllers.*

Keeping things tidy, an important norm in the behaviour setting is in part achieved by maintaining this synomorph. Throughout the experiment, this place has a dedicated function: that of isolating personal items and other things that are irrelevant to the experiment. It is important to note that by responding to this particular area of the laboratory, the area is maintained as a place for action. That is, the synomorph is actively achieved by its participants: it, for example, is by leaving one's coat or the VR headset that the place comes to invite revising later (as shown in figure 3). This might seem a trivial observation, but such historical dependencies structure the behaviour setting across its unfolding.

(ii) The calibration synomorph

As the behaviour setting unfolds, we can notice another place for action. In the main area of the laboratory, between the unused experimental set-up and the area hidden by the screen, there is an open space. After leaving personal belongings there and before the training starts, this place becomes a place for calibrating the instrumentation (figure 6):

> *R.M. has his hands full of fragile and expensive equipment, and a table close to the VR boundary affords R.M. to carefully place the instruments there. Subject S.N.'s bare arm invites to put on the blue cuff, then the orthopaedic brace, but not* ***too tight****, R.M. checks with S.N. whether she can move comfortably while capturing S.N.'s muscle activation patterns with the help of a tablet.*

Once the cuff and brace are donned, the experimenter and the subject work together to align the virtual space and the area demarcated in the laboratory by the tape on the floor (figure 4):

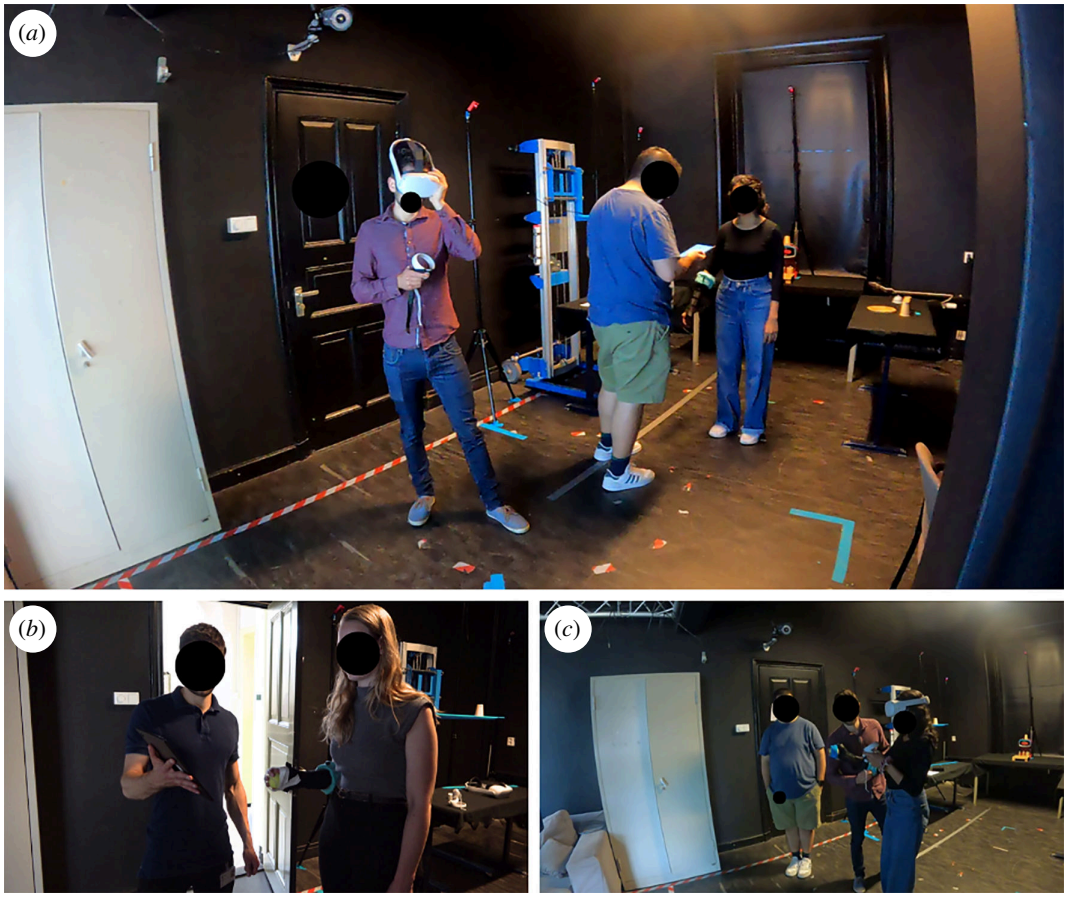

Figure 6. Snapshots from the participants engaged in the standing patterns of behaviour of the VR calibration synomorph, in (*a*) and (*b*), the experimenters are calibrating the control system, while in (*c*), the subjects and experimenters align the virtual space to the physical playing field.

> *Delicately, the headset is placed on S.N.'s head and then moved, adjusted and raised, placed again to be aligned with S.N.'s eyes. The screen in the middle of the room is already broadcasting and showing the settings of the VR gaming app. The blue tape on the floor and the pointer in S.N.'s hands offer the experimenters the possibility of guiding the subjects in drawing the boundaries of their virtual space. The experimenter follows the tape with his foot, while S.N.—seeing the room through the headset—follows him with the pointer. Coordinating together, the experimenter and S.N. make the virtual space align with the physical playing field.*

The successful unfolding of the calibration synomorph ensures that the subject can move safely in the room and that the VR training can be precisely monitored and measured. The synomorph sets up the conditions for the next VR-playing synomorph. Hence, achieving coordination between the virtual space and the area on the floor invites both the experimenters and the subjects to engage with the VR game.

(iii) The virtual reality-playing synomorph

Once the instruments are calibrated, the VR calibration synomorph subsides (as in figure 3). The experimenters move out of the playing field (delimitated by the blue tape), leaving only the subject there. It becomes a place of action that, there and then, allows the subject to play the VR game, moving freely and safely as the other participants are kept out (see figure 7):

> *Having replaced the empty space with the layout of the video game, S.N. is told that she can start the game. Around S.N., everyone is quiet. Everything feels 'on hold'. The boundaries set up during the calibration constrain S.N. within the playing field, allowing the subject to move freely within it, but repelling the experimenters and everyone else, me included. We sense to stay away, preserving the integrity of the virtual–physical coupling, and of the experiment. In the meantime, the video game and the open space invite S.N. to play the game: making and serving (virtual) coffee and being careful not to spill or break the (virtual) cups.*

The VR-playing synomorph and the calibration synomorph overlap in place, but they never overlap in time (cf. figures 3 and 4). Against a background of the previous training, personal items stored and proper calibration, the VR synomorph served as a dedicated place for action; providing a place for the subject to play the game safely, trusting that she could move freely without stumbling over obstacles or other individuals. It should be noted that the synomorph plays a role not only in allowing VR-playing activities but also crucial in maintaining measurement activities. Data collection is achieved through the assemblage of the different instruments, and needs to be maintained by making sure that the data collected are always precisely tied to the subject's movements and positions in the physical space.

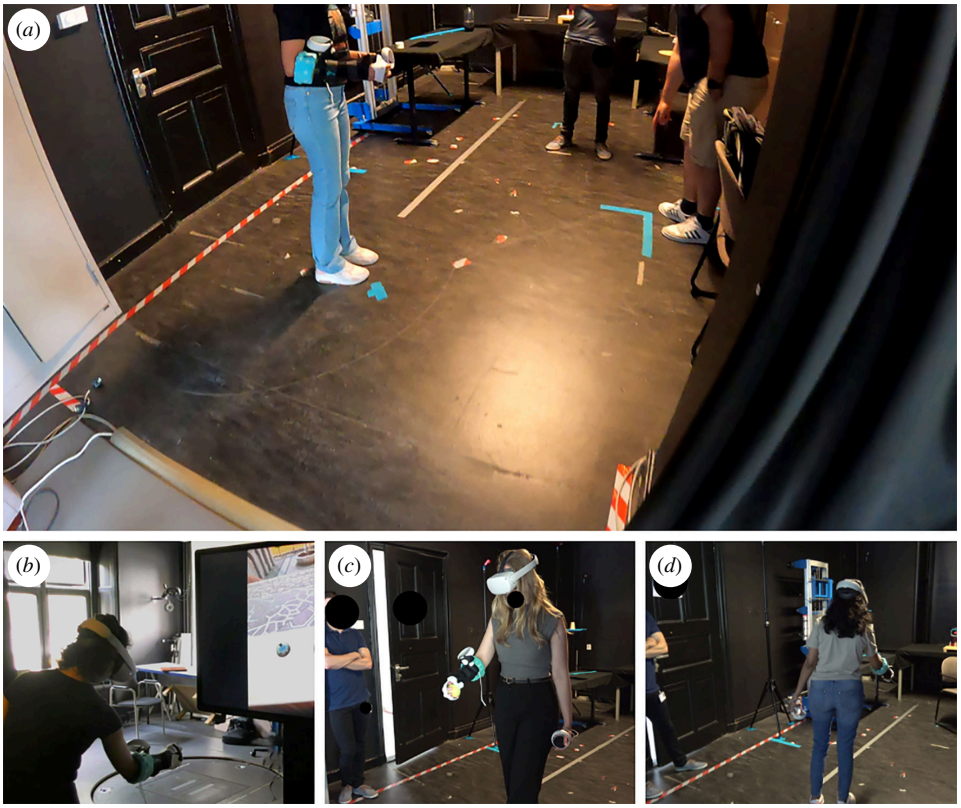

Figure 7. Snapshots from the VR-playing synomorph. In (*a*), the playing field is identified with the blue tape and the red and white tape. In (*b*), I.K. is playing; in (*c*), S.N., playing; and in (*d*), M.M., playing.

(iv) The monitoring synomorph

Finally, the VR-playing synomorph depends not only on the previous synomorphs unfolding over time but also on another synomorph running in parallel. While the subject is playing the VR game, the experimenters need to monitor the subject's safety and take notes of what she does, for example, the errors and the glitches. To keep the subject safe and secure the quality of the data collection, therefore, a VR-monitoring synomorph is maintained (figure 8). The unused experimental set-up adjacent to the bounded area and in front of the screen affords the researchers a privileged observation point from which they can monitor the experiment. Consider the following episode:

> *While the game is played, the screen solicits C.K. to reposition a chair to better see how the subject is performing the tasks. The closet at the entrance of the laboratory and adjacent to the edge of the playing field instead offers an optimal view for R.M. to see up close what M.M. is doing and be ready to intervene whether something goes wrong. In the game, M.M. drops a glass, it shatters on the virtual floor, and C.K. writes this down. Later in the game, the monitor shows M.M. spilling coffee, and C.K. is again invited to take a note. Seeing that M.M. is not in the centre of the calibrated space, R.M. is moved to pause the game and go into the area to help M.M. back to the centre before continuing the game again.*

Notice that this monitoring synomorph and the VR-playing synomorph were interdependent: trivially, without play, there is nothing to monitor. However, the converse holds equally. To maintain the safety of the VR-playing synomorph, the subject trusts the experimenters to stay out of the playing field and to be positioned to monitor her performance. To successfully achieve such norms, the space was set up to provide an optimal position, both for tracking the measurements and checking on the subject, and this constrained the position of the synomorph. Occasionally, there was only one experimenter present during the training session. Interestingly, as figure 8*a*,*b* show, it was observed that whoever this was, they would then neither sit at the table nor stand close to the closet. Instead, to keep a grip on the situation, they would stand directly in front of the screen, close to the boundary of the calibrated area—to be fast in intervening—and take notes while standing up.

(c) Coordinating norms

Starting from the idea that behaviour settings and their synomorphs are reciprocal yet unfold over different timescales, we have tried to show how the normative requirements of a behaviour setting can be thought of to set up the conditions for its distinct synomorphs to invite appropriate activity. In turn, engaging these synomorphs well achieves the normative specificity of the behaviour setting. Our observations of the laboratory setting suggest four dedicated places for action that interlock to constitute the behaviour setting over time. What, then, holds these timescales of engagements together? To end our analysis, we present three examples that foreground the situationally sensitive activities of the participants that coordinate the distinct synomorphs into a normatively specific whole: a behaviour setting.

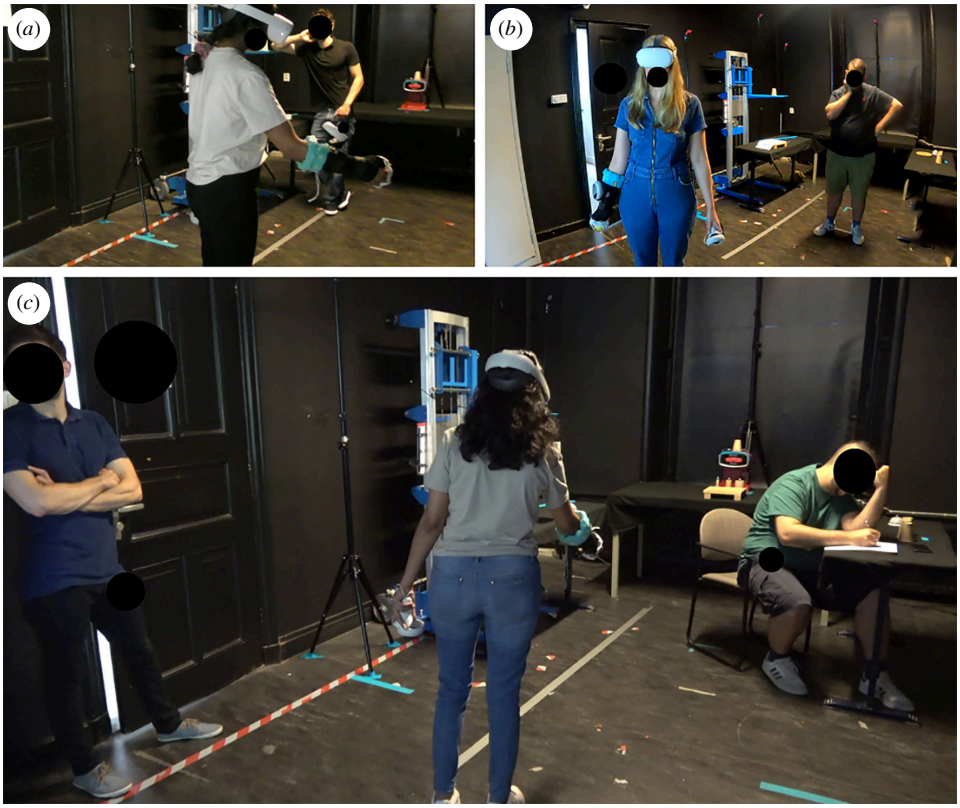

Figure 8. Snapshots of the VR-monitoring area. Wherein (*a*) and (*b*), both R.M. and C.K. are standing in the same area as they are the only experimenters in the room, whereas in (*c*), the most common configuration of the synomorph.

(i) Example 1: boundary making

In discussing the calibration synomorph, it was highlighted how aligning the virtual space with the physical playing field created a boundary that was crucial in preserving the integrity of the VR-playing synomorph. The boundary was made with the tape and calibrated to the virtual environment, but it was also actively maintained by the great sensitivity of the participants in the setting. The following episode show this particular sensitivity and how it is evident as RT crosses the boundary during the ongoing experiment to take a picture of the set-up (see figure 4):

> *R.T. is outside the boundary. He walks along the boundary adjacent to the big screen, swiftly yet cautiously moving around it, to the other side of the square, almost tiptoeing as if he is walking on eggshells. After taking the picture, he has to get back to his laptop again. This time he tries the other side of the square, where a desk and a chair are close to the outer boundary of the synomorph. He turns sideways, adjusting to make himself as flat as possible, as if he were squeezing himself through a narrow aperture, created by the desk and the chair on his left and the invisible yet equally real synomorphic boundary on his right.*

Notice how sensitivity to the normative constraints of the synomorph is performed: R.T. almost tiptoes, is responsive to otherwise irrelevant parts of the space because of a particular material configuration, and squeezes through invisible boundaries. The participant is not only sensitive to maintaining a clear spatial distinction between the two synomorphs, but he is, more importantly, sensitive to the norm that the standing patterns of behaviour—of the VR-playing and of the monitoring synomorph—need to be kept apart to enable the larger scale behaviour setting to continue.

(ii) Example 2: maintaining mutual operating conditions

We have seen that the subject engaging with VR-playing synomorph needs to stay in the centre to ensure that the participant is aligned with the virtual space. Doing otherwise means making the game unplayable. However, that alignment is also needed for the precision of the data collection. In this example, M.M. is playing the VR game, and the experiment is unfolding. C.K. and R.M. are monitoring the experimental activities and the subject (see 'the monitoring synomorph' above for details):

> *M.M., the subject, is eager to get started, cheering 'Let's go!'. However, before she clicks 'OK' to start, C.K. stops her by addressing R.M.* ***'R.M.?'*** *as if he was forgetting something. R.M. springs up from the cabinet he is leaning on, and he says 'Oh. Yeah'. R.M. then crosses the boundary of the playing field with no reservations and warns her 'Wait a minute'. M.M. turns towards R.M., who gently puts his hands on her shoulders while saying 'I am moving you a bit'. He guides her to the centre of the bounded area. M.M. cannot see what surrounds her but lets herself be guided. After moving her to the centre, R.M. checks, lowers his head, and quickly looks at the space around her. With everything all right, R.M. quickly returns to his position and leaves the playing field 'Now you can start the level'.*

The monitoring synomorph runs parallel with the playing synomorph while mutually depending on each other. As mentioned earlier, there is something to monitor only if the game is played. While the norms in play in the playing field are those of playing safely and moving freely, from within the monitoring synomorph, the subjects can show up as off-centred: as potentially disturbing the measurements or as endangering themselves when moving around. This interdependence between normatively distinct synomorphs materializes in this episode as the possibility that opens up for researchers to quickly improve the one so as to return to the other, thus maintaining their mutual operating conditions.

(iii) Example 3: tying the virtual reality synomorph back into the measuring activities

Not all normativity is easy to navigate, and sometimes something unexpected will happen that could potentially perturb the setting. In this last episode, we see the researcher being sensitive to the VR-monitoring conditions that are not met by what is happening in the playing field. However, it is, initially, unclear what this practically means to the overall setting. S.N. is playing the VR game and C.K. and R.M. are at their position in their monitoring synomorph:

> *As S.N. is moving the virtual cup towards the coffee machine in the game projected overhead, C.K. notices that he cannot hear the sound of the game. Breaking the silence, he asks 'Is the sound on?'. 'I think it's off' R.M. responds. S.N., still playing, answers too 'It is quite soft, but it is there'. Not sure what to do, R.M. asks 'Do you want me to turn it on?', 'No.' answers S.N. bluntly, which makes R.M. giggle. S.N. explains 'In level 2 I heard a glass breaking and…'. C.K. sitting at the table, looks perplexed 'Wait…' he says, but S.N. interrupts him 'Or should it be louder for your research?' she asks. Before the training session diverges into a discussion, C.K. is moved to jump in 'Well…it gives you some information when the sound is on, so we should make it louder'. R.M. quietly agrees and crosses the synomorph's boundary to solve the problem.*

The loss of sound is unexpected, and the different participants show a different appreciation of its relevance to the setting. At first, C.K. and the subject notice it, while R.M. is more concerned for the gameplay than for the data and wonders what to do. C.K. begins to sense that it jeopardizes the reproducibility of the training and hence the quality of the data, so he jumps into the conversation, making the concern public to redress the issue. While we have not encountered this anomaly again, it seems likely that the experience has made future activities within the behaviour setting more specific: next time the sound is off, or too soft, the researchers will know what to do to maintain its norms.

4. General discussion

This study set out to explore what normativity looks like once we consider it as unfolding out in the open. Using Barker's behaviour settings as a window onto these dynamics, we described the standing patterns of behaviour in the laboratory—the laboratory understood as a behaviour setting. We then dove into the material organization that constituted the behaviour setting over time; we identified four synomorphs—dedicated places of activity—where each had its own norms of performing well. In the 'storing synomorph' maintaining tidiness was important, whereas during the 'calibration synomorph', both measurement accuracy and safety took priority. We highlighted, moreover, how the overall behaviour setting made the various synomorphs relevant to the participants' behaviour: each synomorph invited the participants' activity at particular times, being ignored instead at others. We concluded by showing three examples of how the participants' situationally sensitive activities tied the two different timescales—the behaviour setting and the synomorph—together.

Adopting behaviour setting theory allowed us to see how normativity is performed rather than pre-formed. In turn, we hope that our observations may inform new theoretical developments on behaviour settings. Indeed, in a recent review of the literature, Avram *et al*. suggest that contemporary behaviour setting research pays insufficient attention to how their phenomena present themselves in real-life contexts ([21], this theme issue). Our study aims to do its part to change that. We took a qualitative observational approach to bring the richness and some of the particularities of everyday action into view. Yet our methods too come with their blind spots.

To show what the normative specificity of a laboratory setting looks like in real life, our study focused on one setting for a relatively short amount of time. Given the study design, it was inevitable that some timescales of activity would not be observed. Although we suggested that the skilled activity of the participant was important in preserving the setting's shared normativity, it is important to note that the acquisition and maintenance of such skill typically unfolds over timescales longer than a single performance [1,22]. Moreover, observing the development of skills requires a focus not only on the setting and its changing participants but also on the participants across changing settings. A similar point holds for interpersonal factors that may well contribute to setting up the laboratory setting we observed.

5. Conclusion

In our observations, we were hard-pressed to find but one activity that was not shaped by the normative demands of the situation. Indeed, most possibilities for action in human life are like that (e.g. [15,23]). If this is so, then we need the research tools to make such normativity visible. By thinking of the setting as temporal—as performed instead of pre-formed—we hope to open behaviour setting theory up to neighbouring approaches. Indeed, behaviour settings do not exist in isolation. They might themselves be thought to take shape within still larger scale sociocultural practices [8,14]. Limiting our observations in time and space did not give us a view of such large-scale organizations. Yet temporalizing behaviour settings suggests they

can be part of a more comprehensive interdisciplinary effort to make these interdependencies visible. Barker's work can hold a middle ground between the (inter)personal and large-scale communal processes in which we live. If normativity is performed instead of pre-formed, then there is work to be done to understand how we organize and navigate the multitude of intricate normativities of everyday life.

Ethics. The independent Ethics Committee for the Social Sciences and Humanities from the University of Antwerp granted approval for this study, reference number SHW_2023_54_1 on the 10/05/2023.

Data accessibility. This article has no additional data.

Declaration of AI use. We have not used AI-assisted technologies in creating this article.

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All authors gave final approval for publication and agreed to be held accountable for the work performed therein.

Conflict of interest declaration. We declare we have no competing interests.

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