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Socio-Spatial Disposition as Validity Mediator

Bridging In-Game Behavioral Data and Real-World People–Environment Relationships

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Abstract: Real-world labs have emerged as a distinctive approach for studying socio-ecological challenges, and digital laboratories offer complementary advantages such as scalability and environment control. Yet the construct validity of game-derived behavioral data raises a central question: Under what conditions can game-derived behavioral data validly reflect real-world practices? This perspective article maps the validity debate across three theoretical positions and organizes the validity question around participant *reactivity*. We propose that socio-spatial disposition, conceptualized as the generative structure underlying both socio-spatial representations and practice, exhibits three properties—structure, durability, and latency—that make it suited as a potential validity mediator to bypass the reactivity against measurement in in-game environments. We outline methodological pathways and advance three hypotheses for future empirical research programs.

Keywords: construct validity, in-game behavioral data, real-world labs, socio-spatial disposition, socio-spatial representation

Real-world labs, or similar solution-oriented approaches—including living labs, transition labs, or transformation labs—have emerged over the past two decades as a distinctive approach to simultaneously promote research and evidence-based societal transformations (Compagnucci et al. 2021; McCrory et al. 2020; Schäpke et al. 2018). Such methods have gained prominence in response to increasingly urgent socio-ecological challenges, including climate change, biodiversity loss, and water and energy scarcity, where the social and environmental dimensions are entangled in a complex system and resist treatments from conventional top-down measures (Sengers et al. 2019). Real-world labs are valued for bringing in multi-actor co-creation of interventions

that deliver new capacities and capabilities for scientific inquiry, policy learning, and stakeholder engagement (Bulkeley et al. 2016; von Wirth et al. 2019).

Despite their strengths, real-world labs have also well-documented limitations in extant research: They are costly, logistically demanding, and difficult to scale or replicate (Hossain et al. 2019; Weberg et al. 2025); their findings are circumscribed by specific places, partnerships, and socio-political contexts, which constrain comparative inference and limit cumulative learning (von Waes et al. 2021). Moreover, they are characterized by recurrent tensions between openness and directionality, as they often operate within normative expectations about what counts as a desirable pathway or legitimate outcome (Engels and Rogge 2018; König et al. 2025).

These limitations create a methodological need for complementary experimental settings that improve the scalability, replicability, and cost efficiency of laboratory-based approaches. Digital and simulated laboratories respond to this need by enabling researchers to systematically diversify environmental variables and examine alternative socio-ecological scenarios under controlled, scalable, and lower-cost conditions (Blascovich et al. 2002). Within the broader potential to integrate hedonic aspects to engage participants, videogame-based methods have become an important form of digital laboratory for socio-ecological research (Duthie et al. 2020; Olgen et al. 2025; Valero et al. 2025).

However, the majority of existing videogame-based research has mobilized games primarily as interventions, particularly for environmental education and promotion of pro-environmental behaviors (Ahmadov et al. 2025; Boncu et al. 2022; Dernat et al. 2025), rather than treating game-derived data as a reliable empirical resource for analyzing socio-ecological scenarios. While the limited utilization of videogame-based methods seems to undermine the potential provided by the digitalization of laboratory-based approaches, it may also reflect that validity issues of the videogame-based methods are under-examined. As David Gundry and Sebastian Deterding (2019: 304) observed, "little [research] has been done on the validity threats of using games to collect data for non-game-related research questions." The central question is therefore: Under what conditions can data generated within built environments serve as a valid source for analyses that reflect real-world decisions and practices?

In the present perspective article, we address this question by examining how participants' *reactivity* affects the *construct validity* of game-derived quantitative behavioral data. Construct validity refers to

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the degree to which such game-derived data measure reliably the theoretical concept they intend to capture (Flake et al. 2022; Grimm and Widaman 2012) (e.g., whether in-game pro-environmental behaviors reflect real-world pro-environmental behaviors). Following Rosa W. Runhardt (2021, 2023, 2025), we define *reactivity* as the modification of measured behavior produced by participants' awareness of being measured and their consequent capacity to deliberately adjust their in-game behavior. We propose that *socio-spatial dispositions*—a latent socio-cognitive attribute that organizes and shapes both people's perception of space and their practice in the space (Ramadier 2010)—can offer a construct with stronger validity than explicit in-game decisions, thereby offering a methodological bridge between digital laboratories and real-world behaviors.

Our argument proceeds in four steps. First, focusing on quantitative in-game behavioral data, we will map the current landscape of the construct validity debate in videogame-based research, identifying divergent positions and the convergence on which our proposal rests. Second, we introduce the theory that explains why socio-spatial dispositions may resist game-specific settings. Third, we outline concrete methodological pathways for operationalizing this approach. Finally, we advance three testable propositions for an empirical research program situated within the UK Research and Innovation-funded *Ecological Knowledge Games* project.

Debate on Validity of In-Game Quantitative Data

The question of whether game-derived quantitative data can validly represent real-world phenomena has generated a substantial body of debate, the positions within which can be arrayed along a spectrum running from skeptical, through conditional, to broadly affirmative (Deterding 2016; Fadillah et al. 2025).

Validity Skeptics

The first position, which we term the *validity skeptics*, advances a socio-psychological argument according to which the framing of an activity as a "game" produces unavoidable effects on player decision-making, thereby obstructing inference from built environment to real-world decision processes. From this standpoint, the game-framing constitutes a fundamental epistemological obstacle that differentiates

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gameplayers' decision-making and behaviors from their real-world life. This phenomenon can be understood as a particularly acute case of what Runhardt (2021) names *alpha reactivity*: the modification of behavior induced by participants' recognition of the measurement situation itself. Andreas Lieberoth (2015) demonstrated experimentally that the mere act of framing an activity as a game, without any modification of its mechanics, produced measurable psychological effects. Deterding (2016) further developed this line of argument, arguing that play frames systematically attenuate real-world consequences and thereby encourage risk-taking and strategic optimization that diverge from everyday behavioral tendencies. Building on findings of this kind, Gundry and Deterding (2019) offered a systematic theoretical articulation in which they identified several categories of game-specific validity threat, among which sits the *framing* issue. According to the authors, the norms and expectations triggered by labeling an activity as a "game" or as "research" produces systematic divergence from participants' everyday practice. Thus positioned, the framing argument articulates a genuine challenge for regarding in-game quantitative data as a reliable source for analysis: If the game frame itself alters behavior, in-game behavioral data may reflect game-specific adaptations rather than the real-world mentality or behaviors of players.

Conditional Validity

The second strand of argument centers on what Dmitri Williams (2010) termed the *mapping principle*: a proposition stating that behaviors observed in virtual environments correspond to their real-world counterparts, but only under specifiable conditions. Such conditions include the level of analysis, the direction of causal models implemented, and the theoretical frame applied. Williams (2010) treated correspondence between in-game and real-world behavior as a testable empirical hypothesis. Edward Castronova and colleagues (2009) provided an early demonstration of this kind at the macro societal level, showing that aggregate macroeconomic behavior in a large commercial virtual world matched exact real-world patterns, and a newly launched server with identical rules rapidly converged toward near-identical economic aggregates. This finding suggests that structural design of the built environment substantially determines the outcomes, regardless of the diversity of in-game behaviors. Jeremy Bailenson and colleagues (2003) provided a complementary demonstration at the individual level, showing that interpersonal spatial behaviors (proxemics according to Hall 1963) in

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immersive virtual environments mirrored real-world social norms: Participants maintained greater distance in front of virtual agents and modulated spacing in response to gaze direction, even in manifestly simulated settings. Nick Yee and colleagues (2009) further demonstrated the *Proteus effect* from an identity perspective, whereby avatar appearance modified user behavior, indicating that the representational layer of the game can introduce behavioral variation of game participants. Although the evidence mobilized by this position is not exclusively quantitative, the *mapping principle* argument insists that the validity of in-game behavioral data must be established domain by domain, specifying which behaviors transfer and under which conditions.

Affirmative Validity

The third position stands with a relatively affirmative perspective of data validity from built environments; it locates the validity discussion not in game-framing itself but in the manner by which data are extracted from games and used for analysis. One maturely developed formulation is the *stealth assessment* that has been offered by Valerie Shute and collaborators. Having identified limitations in traditional assessment methods such as multiple-choice questions in educational science, they (Shute 2011; Shute and Ventura 2013) developed the principle of embedding performance-based assessments within gameplay such that players remain unaware of being assessed. They further articulated this approach, characterizing it as the invisible weaving of assessment into the fabric of complex learning environments, in which the evidence required to assess targeted skills is supplied by players' continuous interactions within the game (Shute and Rahimi 2021). For instance, in the *Physics Playground* videogame developed for their research to measure creativity, players are not directly questioned on their "creative thinking" but simply asked to attempt to solve physics puzzles. The game mechanic logs the variety of object categories deployed across game players' solutions, and their behavioral traces are continuously used to update a creativity estimate, entirely outside the player's awareness. Such assessments operate on latent level, thereby circumventing the participant reactivity that compromises explicit measures. Although not framed in identical terms, Kristen DiCerbo (2014) demonstrated an analogous approach, showing that persistence could be validly inferred from behavioral patterns in a commercial game, with in-game indicators correlating with external measures.

Another approach is closely related to stealth assessment in its concern to circumvent participant reactivity, yet is distinguished by drawing

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inference from the emergent order generated by large-scale in-game interactions. In contrast to Gundry and Deterding (2019) who treated the systemic complexity of games as a threat to validity, this interactive approach regards complexity as the very condition under which regular behavioral patterns become observable. An empirical body of work of such an approach has been developed by Anders Drachen and colleagues (e.g., see Canossa et al. 2018; Drachen et al. 2012, 2013; Drachen and Canossa 2011), whose research has shown that the spatial and temporal behavioral data generated within games contain meaningful structure. Drawing on clustering techniques (Bauckhage et al. 2014), GIS-based spatial analysis (Drachen and Canossa 2011), and sequence analysis (Canossa et al. 2018), the authors have demonstrated that players sort into distinct behavioral profiles on the basis of movement patterns, dwelling times, and spatial interaction.

Across the three positions surveyed, *participant reactivity* and *construct validity* function as the central axes of debate between these authors. *Validity skeptics* suggest that the game-framing itself is a source of systematic distortion: By signaling to participants that their actions are consequential only within a bounded and artificial context, it triggers behavioral adaptations that diverge from everyday conduct. Therefore, in-game behavioral data reflect only game-specific orientations rather than the real-world tendencies that researchers seek to measure. The *conditional validity* position concedes this risk while refusing to treat the game-framing as decisive factor of construct validity. Instead, they insist that the correspondence between in-game and real-world behavior is an empirical question whose answer depends on the domain, the level of analysis, and the theoretical framework applied. Finally, the *affirmative* position takes further distance in resolving the game-framing tension by embedding measurement at a level (at least partially) beneath participants' reflective awareness.

It appears to us that the stealth approach offers a coherent framework for enhancing construct validity of game-derived behavioral data. By embedding measurements below the threshold of reflective awareness, it removes the conditions under which strategic adaptation arises. The underlying mechanism of this approach relies on the automatic and habitual character of participant behaviors within structured environments, whether virtual or real-world, which renders behavioral traces recoverable as data without distortion introduced by participant awareness.

This methodological advantage carries a corresponding ethical concern. Unobtrusively collected data raises questions about informed

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consent, the right to withdrawal, and whether retroactive debriefing can adequately substitute for prospective authorization of participants in research projects. A constructive solution is therefore to identify designs that preserve the validity-enhancing property of unawareness without recourse to deception. Whether this proves operationalizable in practice remains an open question, and one which we will discuss in the following section.

Socio-Spatial Disposition as Validity Mediator

We propose that *socio-spatial disposition* constitutes a construct that is structurally resistant to strategic adaptation, and can therefore serve as a valid mediator linking in-game behavioral data to real-world people–environment relationships. The argument proceeds in two steps. First, we establish the conceptual framework on which the construct depends, clarifying the relationships between socio-spatial disposition, socio-spatial representation, and socio-spatial practice. Second, we identify three properties of socio-spatial disposition—*structure*, *durability*, and *latency*—and show how these jointly constitute a theoretically defensible and pragmatically operationalizable object of analysis for game-based behavioral data.

Socio-spatial Disposition, Representation, and Practice

The concept of *socio-spatial disposition* was developed by Thierry Ramadier (2010) as a spatial extension of Pierre Bourdieu's (1990, 2016) notion of *habitus*: a system of durable, transposable tendencies generated through an individual's socialization. In the spatial domain, *socio-spatial disposition* can be understood as the system of symbols interiorized from the environment according to individuals' social trajectory, positions, and capitals. Socio-spatial disposition functions as an underlying generative structure that organizes and shapes (with specific social and spatial context) both how individuals represent space and how they act within it. *Socio-spatial representations* and *socio-spatial practices* thus constitute two observable manifestations of socio-spatial disposition, forming a hierarchical relationship (see Figure 1).

Social representations are an "organized set of cognitive elements" (Rateau et al. 2012: 478), including knowledge, beliefs, opinions, images, and attitudes (Dany and Apostolidis 2002), which are socially elaborated and shared, oriented toward practice, and contribute to

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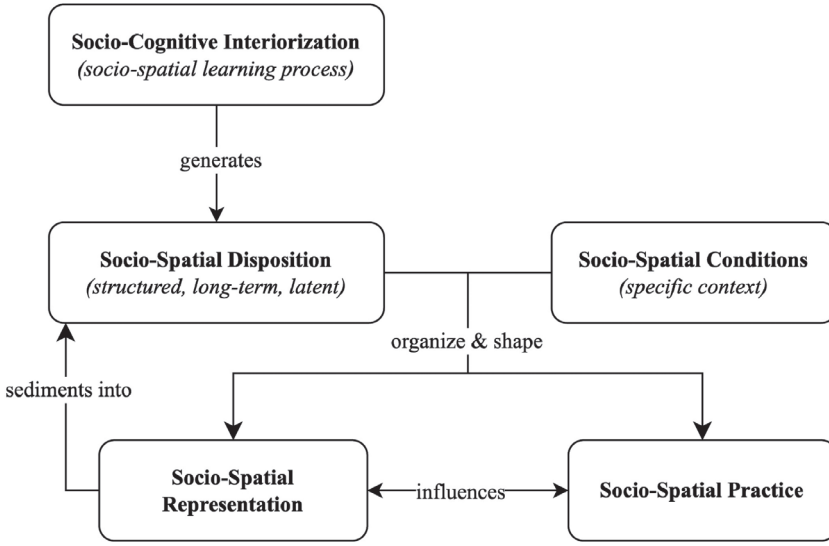


Figure 1. Socio-spatial disposition as underlying generative structure. Developed from Ramadier (2010).

the construction of a reality common to a social group (Jodelet 2003). Extending this perspective to the spatial domain, Denise Jodelet and Stanley Milgram (1976) demonstrated that cognitive representations of space follow the same sociological principles: Socio-spatial representations are not purely individual cognitive structures but are socially constructed, carrying the imprint of collective practices and shared frames of reference. As a form of practice-oriented knowledge, socio-spatial representations serve as guides to structured spatial practice (Chen et al. 2024; Dias and Ramadier 2015, 2017; Ramadier 2002, 2007).

However, the relationship between socio-spatial representation, practice, and disposition is neither one of simple correspondence nor static. Through repeated engagement with the environment, individuals develop relatively stable representational and practical orientations that gradually become habitual and automatized. Socio-spatial representations and practices mutually influence one another, and it is through this process that representations progressively sediment into the dispositional layer of the individual.

This relationship between the stated constructs carries direct methodological implications, as the same latent disposition manifests through two observable channels, while remaining accessible to researchers

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through either route. Representations are unconsciously held by individuals but can be elicited through deliberate reflection, whereas socio-spatial practices are primarily expressed through mobility behaviors and interactions with objects in the environment.

Three Properties Relevant to Validity

While socio-spatial disposition is observed from individuals' representations and practices, it possesses three inherent properties—structure, durability, and latency—that make it particularly suitable as a mediating construct for enhancing the validity of in-game behavioral data.

Structure

The first property concerns the inherent organization of socio-spatial representations and the foregoing established relationship between representation and practice. Two complementary traditions in Social Representation Theory clarify what is at stake. The structural approach (Moliner and Abric 2015) suggests that every social representation is organized around a *central core* consisting of stable and consensual cognitive elements, surrounded by *peripheral elements* that absorb contextual variation. The central core provides the meaning-making framework through which individuals make sense of the social world, whereas the peripheral elements adapt them to local and situational context. The sociodynamic approach (Doise 2003) complements this by suggesting that systematic interindividual variation in representations reflects individuals' social positions and trajectories.

These two approaches imply that socio-spatial representations are analytically structured in a manner that lends itself to comparative quantitative treatment. Empirical research from Pierre Dias and Thierry Ramadier (2015, 2017) connected social conditions and cognitive mapping, confirming that mobility behaviors in urban space can reveal social positions and social trajectory. The profiling of socio-spatial representations and practice therefore provides a meaningful comparator to individuals' in-game spatial behavior which is also oriented by their socio-spatial dispositions.

Durability

The second property concerns the durability of socio-spatial disposition across time. The foundational basis for this claim lies in the concept of

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habitus from which socio-spatial disposition is derived. Bourdieu (2016) defined *habitus* by its durability over individuals' lifetime, generated through prolonged socialization and resistant to situational variation. *Habitus* is, moreover, *transposable* as it involves dispositions formed in some settings that can be carried over into others, while continuing to organize practices.

Empirical evidence from the place attachment literature provides convergent support. Place-related orientations exhibit stable patterns within relevant life phases, even as they evolve over the longer term in response to changes in residence, mobility, and life trajectory (Lewicka 2011). Within the structural approach to socio-spatial representations, this durability is identifiable in the *central core* of socio-spatial representations, as the elements are anchored in enduring people–environment relationships formed through individuals' socialization process (Abric 1993).

Therefore, socio-spatial disposition is resistant to short-term contents of particular environments, and the change at the central core of the representation is typically slow and preceded by accumulated peripheral adaptation in response to environmental change. We can reasonably infer that this durable (hence stable) socio-spatial disposition of individuals is difficult to manipulate by individuals in a game strategy.

Latency

Latency is the most consequential feature of socio-spatial disposition for the present argument, as the discreteness of measurement is considered the main pathway to bypass the alpha reactivity of participants. Although we have established socio-spatial representations and practices as two parallel channels to observe socio-spatial dispositions, the way the representations and practices manifest implicate actually two different ways: While practice is observable through behaviors in space, representations are unconsciously maintained by individuals. Martin W. Bauer and George Gaskell (1999) observed that examining one's own social representations is a *reflective* operation that requires individuals to distance themselves from the object and to distinguish between the signifier and the signified. We can therefore infer that when participants are not invited to represent, this reflective operation is not mobilized. Game-derived behavioral data are produced precisely under conditions in which the socio-spatial reflective operation is not solicited. Consequently, the socio-spatial dispositions of participants remain backgrounded and operate without their deliberate engagement. Individuals'

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in-game spatial behaviors reflect their socio-spatial dispositions as reliably as their real-world spatial behaviors.

This is consistent with established accounts of habit and automaticity, in which repeated context–response pairings yield behavioral tendencies that operate with limited conscious oversight (Gardner and Rebar 2019; Wood and Neal 2007). When players interact within an in-game environment, their explicit decisions on the game strategy—what to build, whom to trade with, which quest to pursue—are responsive to game goals and rewards. By contrast, their spatial behavior—how they move through space, where they dwell, what distances they maintain, how they sequence their engagement with spatial elements—is more likely to reflect underlying dispositional tendencies that operate below the threshold of strategic control.

It is this latency that closes the loop with the preceding section: Socio-spatial dispositions constitute a theoretically grounded construct that enhances the validity of in-game behavioral data precisely because of where they sit relative to conscious awareness. Reactivity operates through participants' recognition not merely that measurement is occurring, but of what is being measured. Awareness of the measurement situation is therefore a necessary but insufficient condition for reactive adaptation: A participant who knows they are being observed but does not know which aspect of their behavior is under scrutiny cannot selectively manage the relevant construct. Data generated by processes that fall below the threshold of reflective monitoring are structurally insulated from reactivity on these grounds—not because participants are unaware that a study is taking place, nor because they choose not to react, but because the specific object of measurement lies outside their reflective scope. Where that condition holds, the precondition for strategic adaptation is not met.

In addition, the three interrelated properties of socio-spatial disposition also offer a practical resolution to the ethical tension identified above: A study can obtain prospective informed consent by fully disclosing what is being measured, while the durability and latency of the socio-spatial disposition ensure that the structured nature of the construct can still be validly revealed.

Methodological Pathways

Socio-spatial disposition is observable through two manifestations: socio-spatial representations and socio-spatial practice. Therefore, to

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reveal the socio-spatial disposition from the in-game environment, researchers can access participants' representational layer using surveys, interviews or cognitive mapping, while accessing participants' socio-spatial practice by recording how participants navigate and interact with elements placed in the built environment. Consequently, the two distinct measurements of the construct, although different in format, can still be compared to understand the same underlying disposition. The three subsections that follow set out the strategies for in-game data collection, and the design that connects them.

Socio-spatial Representation Data as One Manifestation of Dispositions

Environmental psychologists have developed a range of methods for eliciting socio-spatial representations (see Griffond-Boitier et al. 2021), including hand sketches, mental maps, and the Spatial Reconstruction Game (JRS, Jeu de Reconstruction Spatiale; Ramadier and Bronner 2006). The JRS asks participants to reconstruct spatial configurations using standardized elements, producing comparable, analyzable data that reveal the relational and configurational aspects of spatial knowledge shaped by anchoring processes. Subsequent work has extended the JRS to participatory and planning contexts, where it functions as a boundary object between individual cognition and institutional framings of space (Clementi and Ramadier 2023; Ramadier 2022). The methodology proposed here is not committed to JRS specifically; the decision regarding the representation-elicitation instrument can be made according to the demands of the research setting.

In-game Behavioral Profiling and Sequence Analysis

To approach individuals' in-game socio-spatial disposition, videogame telemetry provides data captured automatically and unobtrusively, such as movement trajectories, dwelling times, zone-transition frequencies, and spacing and clustering patterns, which instantiate the spatial and temporal features of in-game practice. Because these data might be logged without requiring explicit player responses, they limit the scope for the participant reactivity that compromises explicit measures, in the manner discussed in *stealth assessment*. Two analytical strategies are particularly suited to extracting socio-spatial profiles from such data: behavioral profiling through cluster analysis of spatial use distributions and zone-transition matrices, which can identify distinct player types

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(Drachen and Canossa 2011); and sequence analysis of in-game action data (Bauckhage et al. 2014) which preserves the temporal ordering of spatial engagement and can be methodologically parallel to the order in which participants place elements in representation-elicitation tasks, where it reveals anchoring hierarchies (Dias and Ramadier 2017).

Comparative Analyses

If socio-spatial profiles derived independently from in-game data and from representation-elicitation methods show structural correspondence, this provides evidence that the game-based measure reveals the same underlying socio-spatial dispositions. This comparative analysis does not require identical results from the two instruments, but rather structurally comparable typologies. To this is added a differential sensitivity test: By varying game objectives while holding spatial configuration constant, it becomes feasible to assess whether socio-spatial dispositions are less affected by in-game strategic manipulation, thereby directly testing the latency property that grounds the validity argument.

Hypotheses and Research Program

We advance three testable hypotheses to guide future empirical work.

H1. Structural correspondence. Socio-spatial behavioral profiles derived from in-game data and socio-spatial representation profiles elicited through established methods will show structural correspondence, consistent with both being indices of the same underlying socio-spatial dispositions.

H2. Differential sensitivity. When spatial configuration is not part of the game's reward structure, socio-spatial patterns will be less affected by manipulation of game objectives than explicit in-game decisions.

H3. Predictive relevance. Socio-spatial disposition profiles, whether derived from in-game data or from representation-elicitation methods, will predict orientations toward environmental practices, thereby establishing criterion validity for the game-based measure.

These hypotheses can be operationalized using bespoke research game tools with controllable spatial configurations and modifiable objectives. Games designed for H1 and H2 would hold environmental layout constant across conditions while varying explicit goals and reward structures. H3 requires linking game-derived data with observational

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representation-elicitation methods of environmental practice orientations, such as interviews, surveys, cognitive mapping or JRS.

Limitations

Several limitations in this perspective article deserve acknowledgment. First, no systematic review of in-game quantitative behavioral data, nor of the methodologies associated with the validity of their analysis, has been conducted. The literature review presented here is therefore narrative in character and may not capture the full breadth and depth of the theoretical contributions and empirical work undertaken on this question. We also acknowledge that the boundaries drawn between the stated theoretical positions are partly artificial, and the typology is offered as an analytical lens rather than a strict taxonomy.

Second, the hypotheses advanced here are theoretical and await empirical testing, and the argument applies most directly to spatial behaviors rather than to all forms of in-game data. The validity of socio-spatial data will depend specifically on game settings in which spatial manipulation is not part of the reward structure, since otherwise reactivity and strategic adaptation are likely to compromise the very property on which the construct's validity rests.

Finally, the latency of socio-spatial dispositions admits degrees rather than constituting a clean binary: Some spatial behaviors will be more automatic than others (e.g., habitual route-following, turning at familiar landmarks), and some game contexts may render spatial behavior instrumentally salient and thereby subject it to strategic control (e.g., optimizing paths to maximize points, deliberately avoiding monitored areas).

Conclusion

We have proposed that socio-spatial disposition—practical orientations toward space shaped through repeated engagement with spatial configurations—constitutes a stronger construct to validate quantitative behavioral data from game-based methods. Their automatic and backgrounded character renders them less susceptible to the participant reactivity that the validity literature identifies as a fundamental threat to game-based data. Established methods for eliciting socio-spatial representations, of which the Spatial Reconstruction Game (JRS) is one example, can serve as an instrument testing empirically whether

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game-derived socio-spatial profiles correspond structurally to those obtained from such methods.

By grounding game-based research in socio-spatial representation theory, this approach provides the socio-theoretical infrastructure that the behavioral telemetry tradition lacks, extends the logic of stealth assessment from educational to socio-ecological constructs, and addresses the validity skeptics' concerns by specifying precisely which class of behavior should resist participant reactivity and why.

The perspective advanced here speaks directly to the limitations of real-world laboratories. Where living labs, transition labs, and transformation labs are constrained by cost, by the difficulty of scaling and replication, and by the recurrent tension between exploration and normatively framed outcomes, *in silico* laboratories built around games offer a complementary infrastructure within which spatial configurations can be systematically varied and people–environment relationships explored at greater scale. By identifying socio-spatial dispositions as the construct that legitimates this complementarity, and by specifying the conditions under which in-game data validly indexes that construct, this article opens a research program at the intersection of socio-spatial representation theory, serious games, and real-world laboratory methodology—a program that, if its propositions are supported, would provide a validated methodological bridge between digital and real-world laboratories for socio-ecological research.

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