

When seeing theory is not enough: can organizational ethnography think with game engines' interactive affordances?

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Abstract

Purpose – This work contributes to organizational videography by proposing interactive videography as a methodological innovation that allows ethnographers to experience and theorize the relational dynamics of organizational life through interactive, emergent visualizations. Using SpacesGame, an interactive research artifact developed using Unreal Engine 4, the study advances the scope of expressive videography by integrating interactivity into the visual representation of theoretical concepts.

Design/methodology/approach – Drawing on Actor-Network Theory (ANT), it highlights how interactive 3D spaces as experimental apparatuses enable the exploration of complex theoretical constructs, such as the entanglement of agency within organizational processes.

Findings – The paper elucidates how game engines can be leveraged to inscribe theoretical imagination in organizational research, demonstrating the contribution of real-time interactivity to expressive videography. In doing so, it argues that videography can better theorize the full sensory dimensions of organizational life through the utilization of interactivity, particularly when addressing complex and difficult-to-visualize theoretical constructs and relationships.

Research limitations/implications – Although game development has been more accessible in recent years, these skills are still uncommon, and many researchers may find it prohibitively challenging to engage in this type of digital research. However, as generative AI tools become more user-friendly, the scope for adoption of this method is vastly growing.

Originality/value – This, to the best of the author's knowledge, is the first attempt at using game engine software for conceptual work in ethnographic research. It offers a way to present and engage theory within an interactive space that allows for novel engagement with theorizing, especially those pertaining to agency in organizational inquiries.

Keywords Videography, Actor-network theory, Management accounting, Game engines, Generative AI, Media methods

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Introduction

In recent years, ethnographic organizational research has increasingly embraced videography as a post-textual or “visual-sensory” approach to organization studies, recognizing non-textual artifacts as integral to both the practice and communication of research (Steyaert *et al.*, 2012; Christianson, 2018; Hassard *et al.*, 2018; van den Scott, 2018; Endrissat *et al.*, 2019; Miko-Schefzig *et al.*, 2022; Redmalm and Skoglund, 2022). While not always aligned with traditional argumentative structures, videography methods offer organizational scholars unique opportunities to manifest research as a “performance of thought” (Wood *et al.*, 2018). The purpose of this paper is to contribute to these burgeoning experiments within ethnographic organization studies by introducing and investigating the use of *interactive videography* as a new visual research practice in organizational ethnography.

Specifically, this paper uses a game engine to develop and explore an interactive research artifact (henceforth SpacesGame) as a medium for exploring, visualizing and interacting with conceptual frameworks during the processes of organizational field research. Game engines are complex software bundles primarily used in the production of digital games, but their utility is expanding into architecture, engineering, cinema and academia as tools of simulation and representation (Jungherr and Schlarb, 2022). Here, instead of drawing or visualizing the field in graph-like artifacts (2D images) or through videography (moving 2D images), the ethnographer has turned to a game engine’s interactive 3D presentation. However,



importantly, this paper is less interested in simulations of reality or in mimicking ethnographic field encounters inside 3D worlds (i.e. aim for *mimesis* and representation), but rather to use interactive 3D space as a sort of “canvas” on which conceptual relationships pertaining to the ethnographic inquiry are organized. Thus, the central question the paper deals with is: What does it mean and what can be achieved by visualizing conceptual relations of field within an interactive 3D space rather than in a static, two-dimensional one within processes of theorizing in visual organizational ethnography?

To answer these questions, the paper draws on a concrete research problem the author was grappling with and which called for a move to interactive videography. This problem emerged in the context of a wider research project into the figuration of economic evidence within a prominent public management consultancy in North England. While the knowledge work of analysts was presented and talked about as a *straightforward* linear affair – the ethnographer was drawn to how discussions, experimentations and decisions on numbers were driven towards, directed at and provoked by a plurality of concerns and directions. From certain angles, the entities involved in this work (numbers, ratios, tables, policy analysts, the futures of a project being evaluated, etc.) come together through analysts’ concern with representation and the truth of numbers. From others, analysts’ efforts enact not accuracy, but adherence to standards, stretching numbers and imagined policy challenges along the lines of method and rules. Yet from another, it is effectiveness, or organizational impact that seems to be at stake with numbers. Consequently, and as these spaces of relating are not necessarily commensurable, at their time of fabrication economic numbers were encountered as an oscillation – as a problem of attachment. Rather than an image of clear-and-distinct objects that are the inputs and outputs of technical tools such as Cost-Benefit Analysis, this alternative image puts in abeyance accounts of numerical work which renders them mechanical, gearbox-like procedures.

This research experience led to the development of and experimentation with an interactive research artifact – a kind of “videogame” developed using the game engine Unreal Engine 4 by Epic Games (unrealengine.com). The author has developed a fully functional piece of software, available as a companion illustration to this article (accessible here: <https://projectsplacesgame.wordpress.com/>). The artifact is intended to facilitate the performance of thinking within the context of the aforementioned ethnographic encounter and the research problem. The paper, as does the artefact, examines the implications of developing and inscribing theoretical relationships pertaining to agency within such interactive videography setting, namely how it allows to experience those agentic relations by the ethnographer as they think. It builds on current videographic research (Redmalm and Skoglund, 2022) to develop a view of interactive videography as a method in which the researcher/player interacts with a gameworld, advancing discussions from current emphasis on the camera and non-participatory spectatorship (Hietanen and Rokka, 2018; Miko-Schefzig *et al.*, 2022) towards interactivity.

The paper is structured as follows. First, it positions its use of videography within current debates in ethnographic organization studies, particularly by aligning with the growing efforts towards “expressive visuality” within video-based ethnographies. As the idea of inscribing theoretical relations is rather abstract and needs explication, the paper then (re)visits formulations of Actor-Network Theory (ANT) regarding the role of inscriptions within the enterprise of modern (social) science. This helps clarify the meaning of theoretical inscriptions, paving the way for the contribution of this paper – the adding of interactivity, and thus experience, to the visuality of research artifacts such as videographies qua inscriptions. It then elaborates on the use of videogame engines – programmable software that allows for the fabrication of interactive experience spaces – as the proposed tool for moving towards videography that interactively inscribe theoretical concerns in ethnographic research. Next, the paper presents the empirical episode mentioned above and which serves as the illustration of the proposed research practice, namely how a field encounter led to methodological challenges in capturing the dynamics of a meeting in which a Cost-Benefit Ratio was calculated. This is followed by a discussion of the development of this episode using Unreal Engine 4. The paper culminates with a discussion of the possibilities and limitations

afforded by this exercise, reflecting on its implications for organizational ethnographic videography research and for practice.

From 2D video-making as research to 3D interactivity-making as research

Videography as expressive visuality

Videography, as its name suggests, is the use of video in ethnographic studies. With visual methods gaining renewed prominence in the social sciences, particularly in ethnography (Pink, 2001; Smets *et al.*, 2014; Pink, 2015; Banks and Zeitlyn, 2015; Walz *et al.*, 2016; Hassard *et al.*, 2018; Vannini, 2015; van den Scott, 2018), it is important to clarify what is meant here by videography. Unlike traditional views of video as text (Christianson, 2018; Hassard *et al.*, 2018), I here draw on video as a form of “expressive videographic research” (Hietanen *et al.*, 2014). This means that the methodological shift to video is driven by the question of “[h]ow to explore and ‘capture’ the embodied and tacit knowledge, the aesthetic judgement and decision-making, the non-verbal elements and the sensing that it involves” (Endrissat *et al.*, 2019; see also Toraldo *et al.*, 2018). Instead of thinking about video as another form of textuality – a way to communicate the visual elements in a field site – the video in expressive videography becomes a method, medium and vehicle for an account-making that aims to capture (express) *more* than just visuality in the field. For instance, Redmalm and Skoglund (2022) use videography to study alternative entrepreneurship, highlighting videography’s ability to “put into focus “scared” concepts” such as entrepreneurial myths and management clichés. Similarly, Hietanen and Rokka (2018) employ videography to examine the dubstep electronic scene, exploring how “it grapples with emergence mediated by the immediacy of online connectivity” (p. 321).

In these cases, video is not understood in a “representational” lens that seeks an objective view of the field. Instead, it is seen as an “entire methodology of the production of expression” seeking to “rupture and reverberate” (Hietanen and Rokka, 2018; see also Vannini, 2015). The main focus is on what can film, that is videography, *do* (rather than show), with Hietanen and Rokka (2018) arguing that there “is an acute need for videography to be understood in this way, instead of being confused or conflated with the other, existing filmmaking traditions” (p. 8) such as documentary films or video ethnography, which are practices relying on a representational lens and understand video as a kind of text. Understood in this expressive manner, a turn to video is in the hope of “delivering a ‘shock to thought’” (p. 9) through emergent theorizing that takes video to be a form of relation (Miko-Schefzig *et al.*, 2022). Expressive videography, therefore, communicates to the viewer implicitly through the senses in a way different to written language (Glisovic *et al.*, 2016), making expressive videography about the creation of “sensations of concepts” (Deleuze and Guattari, 1994; quoted in Wood *et al.*, 2018), either in our life, in our academic practice or in the lives of our audiences, that is with those which the video makes relation.

This form of expressive videography (Hietanen *et al.*, 2014) significantly enriches organizational research by providing new conceptual frameworks and perspectives on our scholarly endeavours as it turns video-making practices into organizational research practices. Notable contributions include Miko-Schefzig *et al.*’s (2022) examination of editing as a “visual research method” for organizational studies. This elevates the craft of film production — specifically, the cutting and sequencing of frames and scenes — into a legitimate organizational research method proper as it forces the researcher to grapple with the task of organizing a viewer’s experience vis-à-vis the researched phenomenon. Putting images in order, deciding on rhythms and speeds of narrative advancement or the content of scenes become both an exploration of the relational dynamics performed between video and its audience Hietanen and Rokka’s (2018) and a research practice that engages the study of organizing phenomenon. Thus, Miko-Schefzig *et al.* (2022) equates film editing with “selective interpretation”, advocating for a pivotal role for organizational researchers in the editing process. The primary feature of this method is that contrary to drawings or photos,

which are still images, here researchers have to contend with *motion* pictures, which, according to Hassard *et al.* (2018), facilitate a “polyvocal approach” to research. This approach allows for the necessity to edit frames to become a tool for the performance of analysis (Miko-Schefzig’s *et al.*, 2022), and the ability to juxtapose images with narrative, manipulate pacing and rearrange storylines to venues through which to transcend static and polarizing categorizations. This leverages the independence of moving images from the written word (Redmalm and Skoglund, 2022) to engage viewers in events that render video agentic (Hietanen and Rokka, 2018).

Crucially, research in videography has elucidated the ways in which thinking about and practicing the production of video can constitute a viable research tool. This paper seeks to advance this work by considering not only moving pictures (i.e. video) but *movable* visuals – interactive video environments – whereby the “viewer” becomes a “player” who can act within a digital world, experiencing entanglements in changing courses of events (Schleiner, 2017). In particular, it addresses the question of visualizing in interactive ways the theoretical concepts with which fieldwork encounters are made sense of and communicated *as they are researched*. The focus is on experiencing our own epistemological, ontological and methodological commitments when we think the field, and, particularly on visual interactivity’s ability to explore these commitments theoretically while contributing to theorizing (Ravasi, 2017; Pradies *et al.*, 2023). The attributes of videography already identified in video-making – sequence, the conceptual importance of the camera and its angles, and the juxtaposition of image and narrative – are all present in the development of interactive video, with an added dimension of interactivity and user agency (Bódi, 2022). This paper posits that adding this element opens additional avenues for exploring affect and embodiment in relation to theory, as it allows the viewer/player to both consume and produce the event of the research/video simultaneously (Ash, 2010). This dual role facilitates the communication of the “full sensory variety of organizational life” (Wood *et al.*, 2018) that has been identified as one of videography’s major contribution to organizations studies.

To better explain what is meant here by visualizing theory and how it might be different than visualizing empirics, I turn now to briefly discuss visual inscriptions in science studies and Actor-Network Theory (ANT). The next section is meant to elucidate how visualizing *theory* in social scientific accounts can be understood as an experimental apparatus of inscription. This is important for my contribution because the research artifact SpacesGame discussed in this paper is intended to be seen in this light: as a form of interactive expressive videography that transcends non-participatory spectatorship and is expressive through its capacity to not only “see theory” but to interact with it.

Inscription in social science: visualizing theoretical possibilities

To better explicate what the interactive expressive videography of SpacesGame aims to perform, it is helpful to recount ANT’s treatments of the question of *inscription*. Alongside ANT’s useful vocabulary for talking about objects, materiality and processes, which is widely utilized in organization studies (Lee and Hassard, 1999; Jones *et al.*, 2004; Czarniawska, 2009; Alcadipani and Hassard, 2010; O’Mahoney *et al.*, 2017), there is a powerful aspect of ANT’s insights related to non-representational sensibility (Hill *et al.*, 2014). ANT studies, and Science Studies more broadly, have emphasized the role of physical and visual artifacts in inscribing ontological differences within experimental apparatuses (Hacking, 1983; Barad, 2007). Rather than seeing scientific production in representationalist terms, Hacking and others meticulously explored the use of experimental apparatuses in science, arguing that what is at stake in knowledge-making is *intervention* rather than passive reflection. Scientists (Latour, 1988), as well as designers and technologists (Akrich, 1992), *inscribe* – that is embed particular visions of the world and associated ways of acting within the materiality and visuality of artifacts – so that various affordances and uses become meaningful. This, performative view, sees knowledge-making in the following way: it is through *acting* with and on the world inside

experimental apparatuses, utilizing their material idiosyncrasies, that we come to know that which is manipulated.

Building on these insights about science and technology, ANT extended the argument to include social science. It posited that the manner in which we narrate the field and imagine and visualize theoretical understandings of social phenomena, serves as qualitative social science's experimental apparatus. This perspective encourages us to think about *the material and visual space within which theoretical differences and their dynamics are inscribed*. For example, let's consider ANT's contribution to the realism/social construction debate (Callon and Latour, 1992). The debate itself is less relevant to this paper, but what interested ANT within this debate is. In this debate, ANT observed how the juxtaposition of social construction (sociality as the domain of agency) and scientific realism (naturality as the domain of agency) *is imagined as plotted and arranged* along a Subject-Object axis that sees these theoretical positions as opposites on a continuum (see Figure 1).

ANT observed how this *experimental apparatus* – a particular imagined theoretical space inscribed in textual storytelling and binary 2D visualizations – was limiting and constraining the debate. It highlighted how imagined spatial relationships between theoretical positions (inscribed in visual and textual forms) frame possible meaningful positions within theoretical space. To put differently, our empirical descriptions—the narratives we construct in written and visual language for reasoning, informing and communicating—are shaped by the literary and visual resources we choose. As such, ANT can be read as an intervention targeting the 2D imaginaries underlying our theoretical speculations.

This paper takes inspiration from this fictive plane of reference that ANT critiqued, aiming to intervene by speculating on the possibility of *extending the experimental apparatus* “outwards” from sets of possibilities inscribed in 2D constellations—linear representations of causality, two-by-two grids, etc.—towards 3D representations of possible positionings and interact with them. To stick with our example, and before delving into interactivity within this endeavour, let us briefly explore the consequences of using a digital 3D fiction as a substitute to the 2D one debated earlier in the text. Figure 2 is an image created using the online interactive tool GeoGebra (<http://www.geogebra.org>) and annotated with PowerPoint. GeoGebra enables 3D graphing of geometry, algebra and statistics for educational purposes. Here, I use it to generate a 3D image that helps visualize the implications of moving beyond 2D to fully 3D inscriptions (compare with Figure 1). This subtle shift, from plotting theoretical positions in 2D graphs to 3D graphs now accessible through computer graphics, opens numerous directions for speculation. In 3D space, a position “moving away” from the Subject-Object axis does not have to be “straight” up but can move in various directions. It can occupy its own plane. This might allow us to speculate about the relations between this positioning (Point B) and the Subject–Object axis (does moving towards point B mean it is “closer” to the naturality pole?), or it may invite us to speculate about additional positionings now that the entire space is open for exploration.

Taking the discussion back to videography, the intellectual wager in this paper is that shifting our experimental apparatus from a 2D, binary visualization of theory and towards an

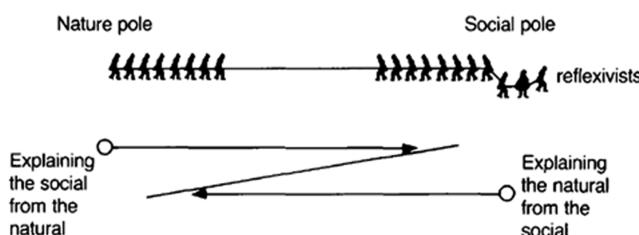


Figure 1. 2D inscription of theoretical space. Source: Latour (1988)

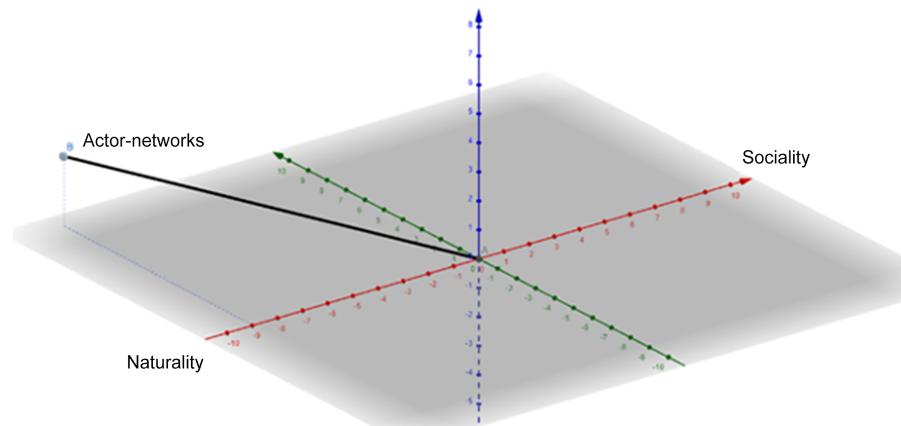


Figure 2. 3D inscription of theoretical space. Source: Author's creation using GeoGebra

interactive use of 3D visuals and inscription of relations can generate new speculative engagements with theoretical possibilities. If, as Haraway (1997) argues, “what we need is to make a difference in material-semiotic apparatuses, to diffract the rays of technoscience so that we get more promising interference patterns on the recording films of our lives and bodies” (p.16), then SpacesGame is here invoked as an experimental apparatus aimed to get at “more promising interference patterns” by speculating on a positionality towards empirics that does not adhere to the 2D limitations imposed by extant imaginations of theoretical mapping (Callon and Latour, 1992). Our detour through ANT and its intervention in the etic use of visual inscription in theoretical work serves to hint at the generativity of this approach, paving the way for the contribution this paper makes to videography, namely using an interactive 3D as the experimental apparatus in which theory is inscribed and engaged with. To do so, one possible tool is a game engine.

When looking is not enough: game engines as inscription tools

Game engines are complex software bundles primarily used in the production of digital games, but their utility is expanding into architecture, engineering, cinema and academia (Jungherr and Schlarb, 2022). Alongside their increased availability and democratization, game engines have captured the imagination of scholars from the natural sciences to the humanities. Software development and the use of immersive virtual spaces is prevalent in research needing simulation (such as healthcare or engineering) as well as in fictional recreations of the past or in experimental cognition using Virtual/Augmented Reality. In scientific research, game engines are growing in popularity as tools of simulation, mainly in the natural sciences and engineering (Friese *et al.*, 2008), and as tools of realist representation, mainly in the humanities. In the case of simulation, some game engines, like Unreal Engine and CryEngine, are considered to be accurate enough to produce “scientific results” (Lewis and Jacobson, 2002) and the software is used, for example, to develop and run simulations of real-world mechanisms such as ecosystems or optical physics (Kiss and Puszta, 2022; Xin *et al.*, 2024). In the humanities and art, the realistic simulation afforded by game engines is used for the promotion of cultural heritage, “edu-tainment” applications (Lepouras and Vassilakis, 2004) or historical reconstructions (Rua and Alvito, 2011). These uses, utilizing game engines’ elaborate physics and 3D rendering capabilities, are mostly aimed at a mimetic relation between media and simulated-reality with the resultant “game” product thought of “standing in place” of an “out-there” that is re-created digitally, be it physical, architectural or cultural reality. As such,

what is emphasized are these tools' ability to accurately represent, show in photorealistic manner, or the correctness of their underlying calculations.

While these developments utilize digital fiction to engage with simulations of what is taken to be the empirical real (the real past or future), this study speculates on the usage of this technology to imagine, experience and speculate about theoretical space. As stated, the goal is not to represent economic evaluation by policy analysts but to explore the expressive potentialities of the medium, developing a media product that produces events "that force us to think [...] by forcing our whole bodies into an active encounter" (Hietanen and Rokka, 2018, p. 324). Contrary to a scientific usage interested in the software's ability to produce subject-independent accuracy or a cultural interest in the production of authenticity in regards history, the interest with game engines that this paper follows is foremost about the software's ability to produce interactive, thus bodily, relations between artifact and user/player/researcher. What is at stake is a game engine's ability to create a 3D spatial environment within which one might inscribe theoretical positions, that is its usage as an interactive grid that can both be seen/watched as well as experienced.

While filmmakers grapple with what is shown to a viewer, game designers, as Costikyan's classic essay (Costikyan, 2005) [1999] posits, are primarily "manipulators of agency" – be it the ability to double-jump in an adventure game, transform into a different creature in a Role-Playing Game, or indeed, any other form of agency within the gameworld. From an exceptionalist perspective, the digital game's uniqueness as a medium lies in its rhythmic interaction (Costello, 2018) and its very structure as an "architecture of affect" (Ash, 2010), rendering the plurality of "modalities of agency" its core characteristic (Chia and Ruffino, 2022). Recent game studies scholarship conceptualizes the game as part of an assortment of technical and cultural, human and nonhuman elements that together give rise to a plurality of agencies (Styhre and Remneland-Wikhamn, 2021; Bódi, 2022) in which the player's agency intertwines with that of the developer via the use of development software (Keogh, 2022), and the player can also "mutate" the agentic options available within the gameworld as they engage the artifact (Schleiner, 2017). These features, which place agency (the player's, the developer's, the software's) at the centre of the design, development and consumption processes, and which turn the design question into "what facilities exist?" (Costikyan, 2005 [1999], p. 197) are why game engines, I argue, can be a productive research tool for expressive videographies that seek to transcend the visual's representational mode.

I turn now to present the empirical episode that raised the methodological questions explored through SpacesGame.

Studying the figuration of a management accounting figure

The impetus for this study stems from an ethnographic encounter that happened during field work among policy analysts working for a major municipality in the north of England. The ethnography (consisting of 18 months of fieldwork in 2013–2015) focused on examining knowledge-practices in the context of quantified accountability in local government, and in particular the use of economic evidence in account-making. The organization I joined, a consultancy branch of the municipality, employs 70 staff and is tasked with delivering policy and strategy advice. Fieldwork involved weekly observations that included shadowing analysts and managers while participating in tasks like the production of economic forecasts, impact evaluations and stakeholder workshops. In many respects, such as getting an access card, my own IT account and desk, I was treated as part of the team. Along with following their daily routines, conversations with analysts explored their use of figures, accounting techniques and their interaction with knowledge objects.

The specific encounter was a meeting between two analysts tasked with calculating and deciding on a Cost-Benefit Ration for one of their projects; one I was not participating in. I joined the meeting as I was particularly interested with the Cost–Benefit Analysis tool, how using it was represented in organizational manuals, how the knowledge work was talked about

and how it unfolded in practice. In manuals, a 2D image showing a mechanical like configuration tells of the work of calculating a ratio that it is straightforward: one moves from Costs to Benefits to the resulting Ratio (see [Figure 3](#)). This was also how analysts described it, as “straightforward”. The meeting, however, proceeded in a completely different manner, one that was hard for me to “capture”, express or think through. One thing was certain – straightforward was not the right way to visualize or think through the work. The disparity between the 2D image and the experience of what the analysts called, “coming up with a ratio for the ratio”, became a focus of my research and I documented the minute details of how knowledge work progressed in the meeting, taking notes as it went along.

In the meeting, as analysts discussed the calculation, exploring various options for what would constitute “benefits” and “costs” and how to derive them, their main reasoning frequently shifted. At one moment, the accounting methods’ prescriptions seemed to determine action straightforwardly (“You do Benefits first, then Costs”), with analysts, literally, moving along an Excel spreadsheet, calculating Benefits, Costs and then the Ratio. At another moment, the goal of achieving a “true” representation of the future guided the decision on which numbers to include (“This number is too big. Claiming this number of benefits would be a leap”). At such moments, it was local knowledge and familiarity with what is or is not possible (rather than the accounting method) influencing the “straightforwardness” of the procedure. Yet at other moments, practical experience and professional knowledge appeared to be the matter of concern (“the Ratio needs to be between 1.0 and 1.9. 1.9 works”).

These diverging concerns led to a meeting that was far removed from how the analysts described the work of calculation as “straightforward”. It also runs counter to how this work is represented within local government manuals. Instead of a linear progression from A to B, where inputs are converted to outputs, the meeting involved testing and teasing out numbers, with specific attachments “pulling” each new iteration of the discussion towards a different direction, rather than “forward”. Analysts were right when they described the work of Cost–Benefit calculation as “you start with a figure and end up with another”, but the convoluted journey and its driving elements were harder to capture. More importantly here, plotting their work along established theoretical positions and traditional visualizations proved extremely complicated, as I was grappling with questions such as “what is driving this action, and in what direction?” or “do subjects or objects determine how calculation happens?” This complexity arises because the account is not deterministically set by accounting requirements, nor solely by the aim to achieve a “reasonable” image of the future, nor purely by the intent to secure funding by “gaming” previously successful numbers.

The precise relationships manifesting during the meeting and the ways policy analysts related to their knowledge-practices and managerial techniques are dealt with in another

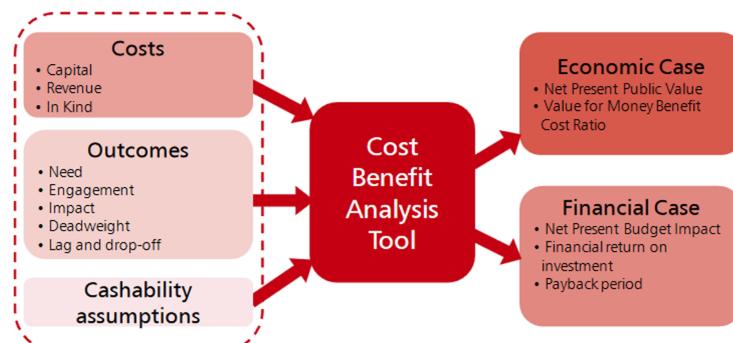


Figure 3. Linear representation of using the cost–benefit analysis tool: a simple matter of inputs and outputs.
Source: HM Treasury (2014)

publication (Gore, 2023). Here, the methodological challenge of how to engage with this meeting and the role of interactive video within this process is my focus. Thus, it suffices to highlight the three concerns that are present in the meeting and move on to discuss how interactive inscription helped me engage with this context. The concerns, already mentioned above, are: calculation as Representation (knowledge-work is driven by the question What is true?), calculation as Formalism (knowledge-work is driven by the question What does the method say?) and calculation as Pragmatism (knowledge-work is driven by future organizational outcomes). Identifying these concerns led me to ponder how can I foreground the sensory dimensions of this organizational event, where concerns manifest themselves and change the “direction” of how the meeting and the invocation of numbers proceeded.

The experience of a “direction” that is constantly in flux during the meeting underscored the problems with 2D representations of the knowledge-work. What if the imagery intended to show us what the phenomena or theoretical space used to conceptualize it looks like is inadequate? Indeed, such representations are prevalent in the working life of policy analysts. Their practice is filled with reflective imagery meant to depict what the processes of working are like, how they should be performed and what direction it needs to take to succeed. These 2D images, of course, are a simplification. Such is any representation. However, it is the *kind* of simplification that became my focus – namely, a simplification that sees the work of account-making as linear, discrete, breakable to phases, mechanical, straightforward. The work, as discussed above, diverges significantly from these characteristics, making simplification a form of betrayal and visual imagery a source of misinformation.

Thus, I decided to explore this event, and how I might inscribe theory to make sense of it, with an interactive medium. In the next section, I turn to explore the use of game engines as registration tools for this sort of task, one interested in allowing researchers to experience and interact with the sort of movements that a theoretical description of this work requires.

Developing/experiencing a management accounting meeting

To explore the figuration of a Cost Benefit Ratio through the happenings of the meeting, I used Unreal Engine 4 (www.epic.com) to create a digital 3D environment. The decision to use Unreal Engine stemmed from a combination of skill and accessibility. I was already familiar with the software, having completed several courses in game development. While I initially considered using Unity, another popular game engine, its business model imposes restrictions of the free usage by academic organizations. Given my employment in an educational institution and my intention to publish my results, I opted for Unreal Engine and its royalty-based model, which allowed me to use advanced technology without incurring fees (if the artifact was not monetized). Using Unreal Engine required coding in C++ and provided access to a suite of tools tailored for 3D environments, both of which aligned well with my skills and objectives.

My initial concept for the artifact was to create an interactive environment that gave the experience of the dynamics I observed in the meeting, that is how something seemingly “straightforward”, like moving from Costs to Benefits, transforms into a balancing act between competing ways forward. It is primarily the ability of game engines to allow developers to “paint of agency”, that is to “add” or “subtract” agential capacities to the “player” of the “game” (Bódi, 2022), that makes them a viable tool for interactive videographies. While filmmakers grapple with what is shown to a viewer, game designers, as Costikyan’s classic essay (Costikyan, 2005) [1999] posits, are primarily “manipulators of agency” – be it the ability to double-jump in an adventure game, transform into a different creature in a Role-Playing Game or indeed, any other form of agency within the gameworld. As such, game development offers a fascinating view on – and thus the ability to contemplate and reflect upon – how abstracted action, in the form of digital simulation of particular physical dynamics, can be assimilated into and inhabited by a diverse array of narrative contexts. In this

initial step of development, I envisioned starting the experience with a 2D representation of the “problem” (see [Figure 4](#)), that then upon player input (keystroke/mouse move) triggered a camera shift to a 3D perspective that reveals the complexity of the situation.

This idea was first prototyped in Unity before I switched to Unreal Engine for the reasons outlined above. However, upon reflection, this gaming experience, this sort of “manipulation of agency”, did not capture well the essence of the dynamics in the meeting. At no point did the analysts experience a straightforward process that later unfolded into complexity. The meeting was not an experience of revelation for the analysts, as they did not expect a straightforwardness that happened to “turn into” a multiplicity of directions. Instead, they began *in media res* and were much more “dropped”, so to speak, into the situation, navigating it as it unfolded. The first prototype, though ultimately discarded, helped me – through the consideration of the kinds of agency I would like to give the player and the experience of agency I wished the game to convey – refine my understanding of the meeting and clarify the specific type of experience I aimed to capture and convey with interactivity.

Thus, I developed a newer version in which a “player”, represented by a blue ball, is dropped onto a plane. Here, I utilized the game engine’s capabilities of simulation physical forces. In this 3D environment, I wanted three basins of attraction to exert forces that deform the ball’s movement, each pulling it towards their respective centres (see [Figure 5](#)). The aim is for players to experience a scenario that begins seemingly at random, reflecting how the meeting started with arbitrary calculations and numbers, and then engage in the intricate task of navigating the unpredictable ball through conflicting forces while moving from point A to point B. The implementation began by adding another element into the “scene” - a group of code lines labelled UMovementComponent. This reusable component is part of the engine’s code architecture and adds movement functionality to objects. UMovementComponent is quite extensive, enabling restrictions along different axis, detection and handling of collisions and the adding of forces – all “out of the box” – providing the game designer with a plethora of agentic capabilities and restrictions to mix and match. The act of creation in game development is inseparable from these pre-coded elements which can express a range of behaviours. I used it to “add” a “force field” to a point in the 3D environment which interacts with the Ball object (the player) and pulls it towards the point. In this way, as the player inputs movement instructions (pressing Right, Left, Forward, Backwards), the movement is disturbed by the physics simulation. This approach to the agency in the scene better captured the experience I sought to convey. It was inspired by the idea that the happening in the meeting, where policy analysts were “pulled” in competing directions, can be seen as an instance where particular values or concerns “deform” the plane on which action unfolds.



Figure 4. First version of SpacesGame. Source: Author’s creation using Unity

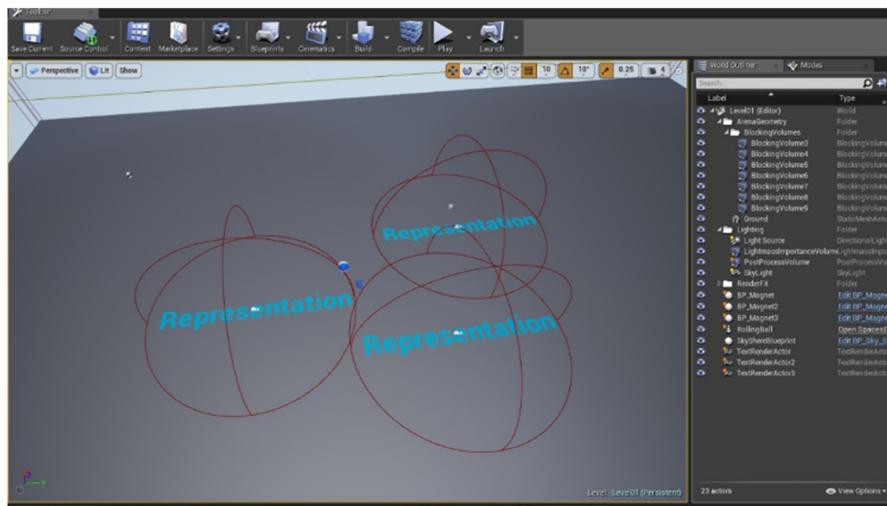


Figure 5. Iterated version of SpacesGame: three basins of attraction. Source: Author's creation using Unreal Engine

This final version took some time to materialize into its current form. As the game was developed and decisions were made regarding the organization of the interactive space, theoretical reflections on these choices emerged. Using the interactive grid as my inscription device, I wanted to “plot” the various concerns that I identified in the meeting: Representation, Formalism and Pragmatism. During the meeting, analysts grabbled with enacting calculation as a true representation of the project’s value, but a concern with methodological restrictions of the Cost-Benefit method (Formalism) could suddenly shift the discussion’s direction. This made me think that these three points on the interactive grid should become attractors – that I should program their ability to attract the player towards each’s centre. That way, each attractor would modify the ball’s advancement, so that any attempt to follow a “calculation path” (a movement from A to B) could become influenced or disrupted by the sphere of an attractor, whether Representation, Formalism or Pragmatism.

This approach demonstrates how the of a game engine enables the addition of forces to the spatial positions of conceptual differences identified in the meeting. It started to become possible to “play” or feel the pull of these differences in the game. What might have remained passive dots on a visual graph turn into, through coding and interactivity, dynamic actants influencing other entities on the grid. This activation transforms the inscription to something dynamic, intervention-able rather than passive. For a processual understanding of the organizational event, a registration method that allowed for interactive and emergent advancement through the grid seemed crucial and was therefore incorporated.

Once the force was added and each point/concern became an attractor, other questions arose. Playing the game a few times revealed that the physics simulation of the interacting forces produced haphazard outcomes. For instance, if I moved the ball rather quickly, it might be pulled towards one point, such as Representation. However, my attempts input to move the ball away, combined with the physics simulation, could result in the ball “shooting” in the opposite direction. This was the result of my player input and the added force from the physics field that each point was simulating. As the ball first moved towards the attraction point, then passing it, it looked like it overshot, gaining momentum and accelerating away from it.

This experience raised an interesting theoretical question about the possibility of “overshoots” in the meeting and whether analysts’ attachments to the three concerns might act upon the situation in a similar way. This proposed me to revisit my meeting notes, as well as

observations from similar meetings, to investigate whether particular attachments during calculations could be understood in this way. Indeed, the analysts' attachments to the Cost-Benefit Analysis tool, and how they performed calculations, often resulted in numbers that were "too big" – overshooting what they knew was possible from a pragmatic perspective. It was this overshooting, driven by attachment to one concern, that seemed to trigger the "appearance" of another concern, acting as a sort of "course correction", to keep with the movement and direction metaphors. This realization, which emerged directly from my experience playing/developing the artifact and thinking through the event with it, informed my decision to finalize this version of the artifact. It encapsulated the insights I sought to capture and conveyed the theoretical dynamics of the meeting effectively.

In its completed form (see [Figure 6](#)), then, the game begins with the drop of a ball, a seemingly arbitrary event (why there? why now?), much like the meeting began with draft numbers brought in by one of the analysts. From the perspective of causes, determination and paths of consequence, the meeting between the two analysts could have been scheduled for a different time and place. There is nothing inherent in how a meeting to discuss accounting calculations happens in organizational realities, and this contingency translates into the game. The outcome depends on the person engaging with it and how they decide to react to the pulling of the ball towards three directions. In this fictional setting, as in the meeting, the goal is to "come up with a number" and for an event to unfold – a movement from A to B that is far from straightforward. Movement across the plane – described by the analysts as "straight-forward" – instead becomes a challenging experience of balancing the ball as it is influenced by the physics simulations emanating from three points: Representation, Formalism and Pragmatism. These attractors shape the trajectory of the ball, turning what might have been a straight line into a jagged, emergent journey. Programmed using the software's physical simulation capabilities, the basins of attraction transform a simple linear task of moving from A to B into an intricate, dynamic and non-deterministic path-making.

Discussion

This paper, along with its interactive companion SpacesGame, introduced and explored the potential of using interactive inscriptions as tools for organizational research, namely videography. Building on ANT and its emphasis on inscription devices within the process of social scientific account-making, the study elucidated how interactive 3D spaces can enhance



Figure 6. Final version of SpacesGame. Source: Author's creation using Unreal Engine

theoretical inquiry in process studies of organizing. By developing and playing a game using Unreal Engine 4, which turns points on a visualization of theory into active forces that can be interacted with, the paper demonstrated that interactive media could transcend the limitations of traditional 2D representations and static ethnographic methods. This informs current videographic approaches and opens new avenues for research and practice that deepen our engagement, particularly with questions of agency.

In case of SpacesGame, the non-premise based argument (see [Wood et al., 2018](#)) suggests, first, that analysts' agency within the happenings of an evaluation meeting is far from straightforward. This highlights the problematic representation in the field itself – how the work of cost benefit calculations is visualized within organizational documents and discussed in analysts' discourse – while opening up a space, literally, to explore the relational manner in which the work is carried out (as far as we theoretically understand it). Second, it suggests that the "turning" from one calculation path to another has to do with an "overshoot" whereby advancing in one direction "misses the mark" and another concern becomes important within the flow of events.

The emphasis on interactivity of theory visualizations, that is allowing for the theorization process, here pertaining to agency within a meeting between analysts, to become embodied and problematized within an interactive virtual space, makes significant contributions to expressive videography. SpacesGame, and the discussion within this paper, extends videography from a method suited for exploring empirical organizational phenomena in non-representational manners ([Endrissat et al., 2019](#); [Toraldo et al., 2018](#); [Hietanen and Rokka, 2018](#)) to a method capable of "performing thought" ([Wood et al., 2018](#)) in relation to *our own theorizing processes* in organization studies. The research artefact did not try to mimic the field, as notions such as Representation, Formalism and Pragmatism, were not emic. Instead, the visualization was in the service of theorization, an attempt to plot and "see" the different positions that might be able to explain the way calculation proceeded in an organizational meeting. The novel addition afforded by the interactive visualization is that these positions on what is usually a 2D, passive drawing/graph, now become "alive", able to simulate the kind of relations that the researcher theorizes between them, here of pulling and changing the course of a calculation as event. In that, it aligns with methodological experimentation in academic practice ([Gilmore et al., 2019](#)), and advocates for novel visual explorations of theoretical space ([Ravasi, 2017](#); [Swedberg, 2016](#)) aimed at delivering an expressive "shock to thought" ([Hietanen and Rokka, 2018](#)) directed towards *our imagination and visualization* of what theory might act like and how it might feel.

Contemporary videography, via turning the researcher into a film editor, brings to the fore the cutting and selectively assembling of images into movement as its main contribution ([Miko-Schefzig et al., 2022](#)). The interactive videography presented here turns the research into a game designer, emphasizing agentic capabilities within an interactive space. It transforms the necessity of deciding on "game mechanics" into another tool for the performance of organizational analysis, as the researcher needs to think about what do the relations between concepts and theory "do", how do they "act", rather than just how are they spatially plotted on a grid. Using an interactive medium allowed the videography to engage with "forces" the particular organizational event manifested through carefully selected agentic influences that activated the inscription of theoretical relations, while also enabling the inscription of agency to be felt through experiencing its emergent properties.

In that, the perspective afforded by the artifact and its development underscores how "post-reflexive ethnography" in organization studies must not only focus on new objects of concern (or ignorance) ([O'Doherty and Neyland, 2019](#)) such as computer algorithms or nuclear devices, which are seldom explored within ethnographic studies of management and organization. This project also needs to become sensitized to other ways of existence that mundane organizational objects (such as a Cost-Benefit Ratio) might partake in, with the development of interactive media artifacts being one methodology with which to engage these. Such artifacts, which here complexified the experience of encountering a management

accounting number in the moments of its creation, could also prove valuable to practitioners. While the artifact does not provide a sense of order and straightforwardness like the presentation in the manual (*Figure 1*) and does not offer analysts with answers on how to perform their work, it does convey a sense of the work and an experience of what an experience of evaluation feels and acts like. Therefore, it could be used more broadly in management learning, training and communicating as a substitute for unrealistic, mechanical representations of organizational work.

However, the proposed method also has its limitations. First, it is crucial to distinguish between simulated experience in the game and the underlying mechanics that drive it. While game engines contribute to studying processual phenomena in organizing, the mechanics that simulate and portray an experience of emergence are themselves non-emergent and highly mechanistic. The physical forces simulated by each attraction point, which are intended to capture the processual nature of how calculation proceeds, are deterministically set by computer code and algorithms that lack any processual qualities. In the same way filmmaking leverages the power of moving images despite the apparatus itself consisting of static images (or digital bits in the case of digital film), the game engine as an apparatus is far removed from the dynamic experience it is used to convey interactively. Recognizing this difference is essential, especially because game engines and interactive media development are less familiar and less understood than film production processes.

Second, there is the question of accessibility. The research artifact developed here depends on my skills as a game developer and on the training I underwent to learn Unreal Engine and code the required behaviors into the game. Although game development has been more accessible in recent years, these skills are still uncommon, and many researchers may find it prohibitively challenging to engage in this type of digital research. One might argue that video editing also requires specialized software training and visual literacy, though software development is undeniably more complex. Having said that, there is good reason to believe that creating such research artifacts will become significantly easier in the very near future. Already, generative AI tools like ChatGPT can produce similar artifacts simply by interpreting textual descriptions of the desired interactivity.

Those interested in incorporating interactive videography into their research but are unfamiliar with game development, can use generative AI tools to create “games” or other interactive 3D environments to surprisingly good results. Gen AI tools, such as ChatGPT, do not, themselves, create the games (although these features are also starting to appear in similar products), but are able to produce computer code to be executed with additional codes. A simple way to start creating 3D experiences and contend with “painting agency” is to ask these tools to produce HTML code. This is code that can be run within web browsers, making it very accessible. Once code is generated by the chatbot, it can be copied into services such as. That will run this code and let you play your game. For instance, I was able to produce a working artifact that similarly drops a ball into a plane within a 3D space and is pulled by three attractors. This was done without any programming knowledge, and this process was much quicker than the development process of SpacesGame.

As with any automatically generated content, some iteration is required. To develop SpacesGame in ChatGPT, I used the following prompt: “I want a game that does the following: It’s a 3D space with a plane that acts as a ground. A ball falls onto it (the player will control the ball) and there are 3 points that act as attractors, attracting the ball which the player needs to balance between the forces.” Initially, the chatbot provided code tailored to specific game engines (in my case, Unity). To address this, I refined my instructions so the chatbot would produce code that could run in a browser. The chatbot understood and also pointed me to free online services that are able to run the generated code. It then began generating code I could experiment with, following a workflow of copying the code, running it, observing the results and requesting amendments. Only minimal iterations were needed, and sharing an image of a similar-looking game also helped guide the chatbot’s output. Ultimately, I arrived at an interactive artifact that offered the agency I was seeking, without requiring any coding

expertise. While I could not fully understand the HTML code it produced, I still achieved a functional interactive videography. As these tools become more user-friendly, there is little reason researchers should not experiment with interactive ways of inscribing theory in ethnographic studies.

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