

# Interfacing AlphaGo: Embodied play, object agency, and algorithmic drama

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## Abstract

For decades, playing Go at a professional level has counted among those things that, in Dreyfus's words, 'computers still can't do'. This changed dramatically in early March 2016, at the Four Seasons Hotel in Seoul, South Korea, when *AlphaGo*, the most sophisticated Go program at the time, beat Lee Sedol, an internationally top-ranked Go professional, by four games to one. A documentary movie has captured and crafted the unfolding drama and, since *AlphaGo*'s momentous win, the drama has been retold in myriad variations. Yet the exhibition match as a technology demonstration—in short, the '*AlphaGo show*'—has not received much scrutiny in STS, notwithstanding or precisely because of all the media frenzy, game commentary, and 'AI' expertise in its wake. This article therefore revisits the second game's 'move 37', its surprise delivery by *AlphaGo* on stage, and the subsequent line of commentary by the attending experts, initiated by the news-receipt token 'ooh'. Drawing upon a reflexive video analysis, the article explicates the Go move's scenic intelligibility—its embodied delivery as part of the technology demonstration—as the contingent result of intricate 'human/machine interfacing'. For mainstream media to report on *AlphaGo*'s 'superhuman intelligence', it both relied upon and effaced such interfacing work. In turn, the article describes and discusses how 'object agency' and 'algorithmic drama' both trade on skillfully embodied play as a pivotal interfacing practice, informing the exhibition match from within its livestream broadcast.

## Keywords

algorithmic drama, AlphaGo show, embodied play, interfacing practices, machine intelligence, object agency, scenic intelligibility, technology demonstration

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‘In Game Two, the Google machine made a move that no human ever would.’

(Metz, *Wired Magazine*, 16 March 2016)

For decades, playing Go at a professional level had counted among those things that ‘computers still can’t do’ (Dreyfus, 1992). This changed dramatically in early March 2016, at the Four Seasons Hotel in Seoul, South Korea, when *AlphaGo*, the most sophisticated Go program at the time, beat Lee Sedol, an internationally top-ranked Go professional, by four games to one. A documentary movie has both captured and crafted the unfolding drama (Kohs, 2017) and, since *AlphaGo*’s momentous win, the drama has been retold in myriad variations across many media outlets. In early March 2016, the exhibition match was livestreamed from Seoul and reportedly watched by over 200 million viewers across Asia, eventuating in 35,000 media reports by March 2017 (Hassabis, 2017). By now, media attention has been complemented with extensive (post-)game commentary, computer Go expertise, and contrasting media analysis, be it by outside observers (e.g., Binder, 2021; Bory, 2019; Curran et al., 2020; Goode, 2018; Mair et al., 2020), the initial commentators (Redmond & Garlock, 2020a, 2020b), or the *AlphaGo* research team (Silver et al., 2016, 2017). However, despite or precisely because of all the media frenzy and scholarly attention, the exhibition match as a particular kind of technology demonstration—in short, the ‘*AlphaGo show*’ (Redmond & Garlock, 2020a, p. 47)—has not received much scrutiny in science and technology studies (STS). Neither has the common attribution of ‘superhuman intelligence’ to the *AlphaGo* program, an attribution which happens to be contingent on the technology demonstration and its livestream broadcast, not solely on the computer program or its digital infrastructure. This article pauses on that ‘curious incongruity’ (Garfinkel, 2002).<sup>1</sup>

The article sets out with a series of (what may appear as) prosaically empirical questions: How was the technology demonstration—the ‘Google DeepMind Challenge Match’ (Google DeepMind, 2016)—performed and broadcast as a Go game? How would its participants, players and commentators, contribute to its distinctively intelligible livestreaming, as just that exhibition match, including the staging of the *AlphaGo* program? And how would specific Go moves be played out, so that they could be seen and attributed to the demonstrated technology, as well as commented and complimented upon as Go moves at all (as ‘powerful’, ‘beautiful’, or ‘intelligent’ moves, for example)? In answer to these questions, the article revisits the second game’s ‘move 37’, its surprise delivery by *AlphaGo* on stage, and the subsequent line of commentary by the attending experts, initiated by the news-receipt token ‘ooh’. Drawing upon a reflexive video analysis, the article explicates the Go move’s scenic intelligibility as the contingent result of intricate ‘human/machine interfacing’ (Lipp & Dickel, 2022), including the move’s embodied delivery, running commentary, and the live montage of the broadcast game. Engaged in by participants, such interfacing work tacitly constituted the ‘evocative event’ (to adapt Goode, 2018), the event that subsequent media coverage would interpret as a telltale sign of *AlphaGo*’s ‘superhuman intelligence’. So did the *Wired Magazine* columnist in the passage quoted above, passage which he completed as follows: ‘And it [move 37] was beautiful. As the world looked on, the move so perfectly demonstrated the

enormously powerful and rather mysterious talents of modern artificial intelligence’ (Metz, 2016, p. 1).

To anticipate, the scenic intelligibility of ‘move 37 in game two’—its recognizable character as a special move in competitive Go—relied upon an intricate praxeology: the situated coproduction of a symmetry spectacle (i.e., the technology demonstration broadcast as a professional Go game), the reflexive constitution of object agency (i.e., the powerful character of move 37 as reflexively produced, through embodied play and running commentary), and the concomitant obfuscation of this constitutive coproduction, both situated and reflexive (i.e., through livestream broadcast and live montage, trading upon the game commentary, while taking for granted the Go game underway). As its title indicates, this article probes the intricate work of *interfacing* AlphaGo as a practical accomplishment by offering a stepwise explication of the highlighted findings.<sup>2</sup>

## Technology demonstrations: Narrating change/interfacing AlphaGo

Information technology (IT) demonstrations have come to define a model for technology demonstrations at large (Rosental, 2021). Not only have they inspired innumerable *Technology, Entertainment, Design* (TED) talks, ‘showcasing important research and ideas from all disciplines and exploring how they connect’ (TED, 2022), but they also have offered a starting point, historical and conceptual, for broader STS accounts of the ‘demonstration society’ (Rosental, 2021) and/or ‘testing society’ (Marres & Stark, 2020), if not their ‘techno-political coproduction’ (e.g., Ryghaug & Skjølsvold, 2021). Against this background, case studies have examined the multiple facets of technology and IT demonstrations. To account for their persuasive character, vested (corporate) interests, and public relations efforts, case studies have examined product demonstrations for their visual interfaces, dramaturgical frames, and production histories (e.g., Coopmans, 2011; Simakova, 2010; Smith, 2009)—in short, for variable aspects of ‘attempt[s] to *manage the context* in which new innovations are evaluated’ (Lampel, 2001, p. 304; emphasis added).<sup>3</sup>

The *AlphaGo show* has largely escaped this kind of analytic attention, and instead been taken at ‘face value’ (Coopmans, 2011, pp. 157–58). For instance, the exhibition match has been invoked as an exemplary case to narrate and reflect upon technological change, as a historical process and/or discursive pattern, rather than to pause on the event’s very occurrence—that is, its staged character and situated performance. Hence, and instead of being described as a technology demonstration, the *AlphaGo show* has been interpreted as part of a broader ‘social drama’ (Binder, 2021), ‘enchanted determinism’ (Campolo & Crawford, 2020), or ‘shifting narratives’ (Bory, 2019). Often interpretations take a comparative form. For example, the *AlphaGo* program (as showcased by Google DeepMind, 2016) and the IBM supercomputer *Deep Blue* (as pitted against chess champion Gary Kasparov in an exhibition match in 1997) have been suggested to ‘diverge significantly in terms of narratives of technological change and corporate identity’ (Bory, 2019, p. 6). In IBM media releases, *Deep Blue* was (allegedly) presented as a ‘*hardware-based, obscure and humanlike player*’, while *AlphaGo* in similar discourses appears as a ‘*software-based, transparent and un-humanlike form of AI*’ (Bory, 2019, p. 1). Upon closer inspection, the suggested comparison proves tricky on all three counts,

however. First, the *AlphaGo show* staged two manifestly ‘humanlike players’ (or, at least, two players as ‘manifestly humanlike’)—Lee Sedol, the top-ranked Go professional from South Korea, and ‘British’ *AlphaGo*, as represented by Aja Huang, its lead programmer (see Excerpt 1).



**Excerpt 1.** *AlphaGo*, as represented by Aja Huang (left), facing Lee Sedol (right) (Image credit: Press kit of *AlphaGo. The Movie*. Kohs, 2017).

Second, Huang relied on pieces of ‘hardware’ (a computer screen, a mouse) to place *AlphaGo*’s moves (see [1] and [2] in Excerpt 1), with no other access to its ‘software’ (the program), let alone its digital infrastructure. Third, the rationale of the program’s moves could thus not be assumed to be entirely ‘transparent’, but appeared (and appear) as deeply mediated, all the more so as ‘control room’ activity was not part of the live broadcast (but see Kohs, 2017). Sedol’s moves were not considered self-evident either, at least if judged by the running game commentary (to which we shall turn in the main section below). In other words, there appears to be a fine line between tracing and trading ‘narrative tropes’ (Bory, 2019, p. 1), especially when acknowledging ‘key moments that symbolized the superiority of the machine over the human’ (p. 5). Such acknowledgements echo promotional discourse, if not ‘singularity fiction’ (Goode, 2018), as exemplified by the game commentary on *Google DeepMind*’s website shortly after the exhibition match and *AlphaGo*’s four-to-one win:

During the games, *AlphaGo* played a handful of highly inventive winning moves, several of which—including move 37 in game two—were so surprising they overturned hundreds of years of received wisdom, and have since been examined extensively by players of all levels. *AlphaGo* somehow taught the world completely new knowledge. (*Google DeepMind*, 2018)

In turn, the notion of ‘human/machine interfacing’ (Lipp & Dickel, 2022) offers an alternative point of entry for examining the *AlphaGo show* as a technology demonstration:

[Instead of] focus[ing] on [and dramatizing] already stabilized interfaces between humans and machines [e.g., Excerpt 1], a concept of *interfacing* registers and amplifies how such interfaces are produced in the first place through the establishment of a whole milieu of entities like gestures, algorithms, and bodies (Lipp & Dickel, 2022, p. 6; emphasis added).

As a suggestive notion, this concept of interfacing hints at the practices constitutive of any particular ‘human/machine interface’, while calling for the empirical specification of its ‘scenic intelligibility’ (Jayyusi, 1988) as a practical accomplishment. Therefore, the *AlphaGo show* will be examined for how it was performed and broadcast as a Go game, an exhibition match played out by two ‘humanlike players’ in terms of its rules, constitutive and preferential, while affording its commentators with an ‘evocative event’ to be understood and commented upon—if only for subsequent media coverage to interpret and report on its manifest outcome, while taking for granted its scenic intelligibility (e.g., in terms *AlphaGo*’s ‘highly inventive winning moves’).

Lipp and Dickel (2022, p. 1) define ‘human/machine interfacing’ in terms of the ‘manifold practices, by which humans and machines become interconnected, by being kept apart’. The present article develops its empirical specification in ethnomethodological terms. Therefore, the article engages in a reflexive video analysis of ‘move 37 in game two’, while focusing on how *AlphaGo*’s move was manifestly ‘interfaced’—that is, played out, commented upon, and assembled, in and through its livestream broadcast (Google DeepMind, 2016).

## Probing ‘move 37’: Scenic intelligibility, interfacing practices, and media coverage

‘Is this- is that the kind of move that eh- Takemiya [referred to], the famous cosmic [Go]?’

(Google DeepMind, 2016, at 1:25:41).

Once *AlphaGo*’s move 37 was played out in ‘game two’ of the exhibition match, it quickly triggered commentaries, first from the game commentators present at the match venue and as part of the livestream broadcast (e.g., regarding ‘cosmic Go’), then in mainstream media coverage, interspersed with quotes from the game commentators, as well as other experts, journalists, and Go professionals. Taken together, that coverage and these quotes typically cast move 37 as an exemplary expression of *AlphaGo*’s ‘superhuman intelligence’, if not as an exemplar of what Erving Goffman in *Frame Analysis* (1974, pp. 28–29) called the ‘astounding complex’—that is, an ‘event that cannot be managed within the traditional cosmology’. How could that be? In what follows, the empirical section of this article explicates the mentioned Go move’s scenic intelligibility—its embodied delivery as part of the *AlphaGo* technology demonstration—as the contingent result of multiple interfacing practices—distinctive practices of ‘human/machine interfacing’ (Lipp & Dickel, 2022), practices that media coverage both relied upon and effaced. Before entering *in medias res*, a note on the chosen (ethno-)methodology and the analyzed video clip(s) is in order.<sup>4</sup>

### *Reflexive video analysis: From analysis to reenactment and back*

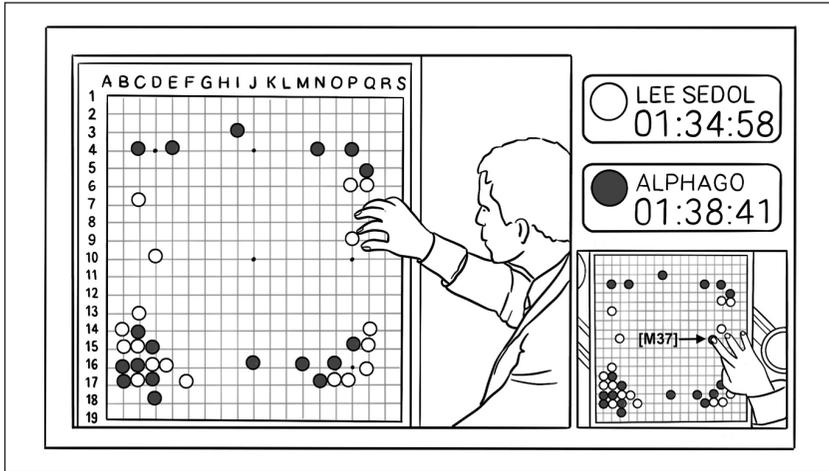
Of the multiple approaches that compose current STS (e.g., Silvast & Virtanen, 2021), ethnomethodology—most simply defined as a sociological approach that studies ‘mundane methods’ in use (Lynch, 2001)—has focused on the situated achievement of practical intelligibility in science, technology, and many related domains (e.g., Maynard & Heritage, 2022). To investigate the craft skills and lab vernacular upon which such intelligibility relies, ethnomethodology has developed and often drawn upon video analysis of situated interaction (Sormani et al., 2017), including media talk (Hutchby, 2009) and video-mediated interaction (Mlynář et al., 2018). A parallel, longstanding development has been to observe or induce ‘trouble’ in interaction, as a heuristic resource to tease out an encounter’s constitutive, yet typically taken-for-granted features (Eisenmann & Rawls, 2023; Garfinkel, 2002; Ziewitz, 2017). Drawing on a reflexive video analysis, the present study articulates these two strands of ethnomethodological inquiry—video analysis and heuristic experimentation—and accordingly analyzes, reenacts, and reanalyzes *AlphaGo*’s ‘move 37 in game two’ with the help of its (i.e., the move’s) widely viewed videos.<sup>5</sup>

As Lynch and colleagues pointed out four decades ago in a programmatic article of relevance to STS,

Ethnomethodological studies have used a variety of methods for breaking the hold of naturalistic sensibility by orienting to ‘troubled’ instances of activity as an initial condition for revealing order-productive practices. (Lynch et al., 1983, p. 223)

In the present case, and if we were to marvel at, interpret, or criticize *AlphaGo*’s ‘super-human intelligence’ right away, we could be challenged for relying on an unquestioned ‘naturalistic sensibility’, taking for granted the scenic intelligibility of the staged match and move 37 in particular, as a largely assumed phenomenon. In turn, and in addition to its transcript-mediated character, the ensuing video analysis will draw upon the practical reenactment of the analyzed interaction (e.g., Sormani, 2016). As a reflexive endeavour, the video analysis will generate and confront us with numerous “‘troubled’ instances of activity’, as Lynch et al. put it. The latter therefore afford us with a second look on that match and this move, inviting us to make explicit the intricate praxeology of their scenic intelligibility—that is, its production practices, bodily, discursively, and/or instrumentally achieved. In a nutshell, ‘[t]he shift in analytic focus is from an observer’s interpretation of a [given] scene to a concerted production of the scenic features [as that given scene]’ (Lynch, 2001, p. 134).

How was the Go game played out so that it could be recognized as such, thus lending itself to be filmed, commented upon, shown (via split-screen), and transcribed in detail? The *AlphaGo* demonstration hinged on skillfully embodied play, not unlike stage magic hinging on the magician’s deceptively ‘acted naturalness’ on stage, as part of the ‘arrangement that work[s] the trick’ (Smith, 2015, p. 330). The remainder of this article will analyze the *AlphaGo* demonstration as an artful achievement of a similar, if admittedly intricate kind. For the purpose, another first look at the ‘Move 37!!’ video is a good starting point (see Excerpt 2).



**Excerpt 2.** *AlphaGo's 'move 37'* being played out (right) during live game commentary (left) (Image credit: drawing based on Estrada, 2016, and Google DeepMind, 2016).

Excerpt 2 shows the moment in which *AlphaGo's* move 37 ([M37] as indicated to the right) was being played out by Aja Huang, its lead programmer (as his hand is shown, placing the program's black stone, both filmed from above), while the live game commentator, Go professional Michael Redmond, was advocating precisely against such a move (as he is shown to the left at a teaching board, making his case by grasping Lee Sedol's prior white move). The framing of the video livestream combines two camera views: one of the 'commentator room' (to the left), the other of the 'game room' (to the right). This split-screen framing (Mondada, 2009) allowed viewers to notice the highlighted mismatch at once, while the two game commentators, Redmond and Garlock, would only do so after having double-checked *their* control screen: 'ooh. [...] that's a- that's a very surprising move' (as they noticed the move 30 seconds later). In turn, the reenactment of *AlphaGo's* move 37 and its running commentary allowed (and will allow) us to explicate *just how* this move was played out and that commentary articulated, so that they could be first shown by the camera(s), and then found by the commentators, to contradict each other—that is, as two 'scenic features' (Lynch, 2001, p. 134) of the *same* 'technical competition' (Sacks, 1992).<sup>6</sup>

### *Object agency: AlphaGo's move analyzed, reenacted, and reanalyzed*

'... a Go stone has power'

(Kajiwara, 1979, p. 1).

As *AlphaGo's* win over Lee Sedol would be, its 'move 37 in game two' was reported as a sensation—in a nutshell, as a demonstration of the 'astounding complex' (Goffman, 1974), showcasing the 'enormously powerful and rather mysterious talents of modern artificial intelligence' (Metz, 2016). For this 'algorithmic drama' (Ziewitz, 2016) to be read into and out of the game encounter between *AlphaGo* and Lee Sedol, however, the encounter had already to be played out and commented upon as a game, if only for it to be broadcast as a recognizable

event. So had move 37. As the overall game, the scenic intelligibility of said move—its embodied delivery as part of the technology demonstration—relied upon an intricate mix of interfacing practices, including the move’s delivery, its running commentary, and the live montage of the broadcast game. In short, ‘object agency’ was continuously performed somehow (Jayyusi, 1988, p. 280). The *AlphaGo show* thus raises two immediate questions:

- How was the Go game recognizably played out as such, as a bilateral encounter between two regular (if unusual) Go players, so that their game and any of its moves could be commented upon, broadcast live, and understood at a distance in those terms at all?
- How was the game commented upon? How in particular would the expert commentators of the exhibition match ensure that their commentaries bore on the unfolding Go game (i.e., ‘game two’) and proved adequate to its livestreamed unfolding (e.g., move 37)?

In answer to the raised questions, this main section of the article offers a reflexive video analysis of ‘move 37 in game two’. First, the section analyzes how the co-present experts articulated their running commentary, before struggling to (re-)establish commentary adequacy upon facing ‘move 37 in game two’, a move that manifestly took them by surprise (also see Mair et al., 2020, pp. 347–348). Second, the section draws upon a reenactment of said move and elaborates upon three ‘tutorial problems’ (Garfinkel, 2002, chap. 4), all of which proved doubly instructive, regarding both the preferentially ‘powerful’ and game constitutive character of said move. In particular, its reenactment will allow us to reanalyze the initial, transcript-based analysis of game commentaries, while specifying the scenic intelligibility of move 37 that those commentaries both hinged upon and contributed to elaborate.

*Go commentary adequacy: A first analysis, transcript-based.* How was the game commented upon? Adequately so? For a remote audience of ‘distributed recipients’ (Hutchby, 2009, p. 14)? A first thing to note is that the two English-speaking expert commentators—Michael Redmond, the best ranked Western Go professional at the time, and Chris Garlock, the managing editor of the *American Go E-Journal*—contextualized the game in its course, in complementary ways. As the anchor journalist, Garlock spelled out the ‘external’ context of the exhibition match, as his comments articulated a connection between the unfolding game, the live broadcast, and the intended audience. One hour into game two, he would, for instance, turn to the camera and contextualize the unfolding game as follows:

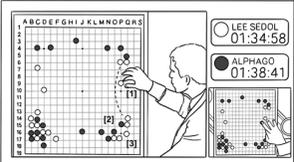
eh, le met just remind folks, you are watching the Google DeepMind Challenge Match. This is the second game in a five-game series. Eh, we are broadcasting live from the Four Seasons here in Seoul. Eh, there is a media crush of hundreds of journalists from around the world, watching this exciting and dramatic and historic showdown.. eh, you know, it’s the classic man versus machine or eh it’s, you know, the machine was built by people, he he.. so it’s all very complicated, it’s all very exciting. (Google DeepMind, 2016, at 01:13:28–01:14:02)

In his capacity as anchor journalist, Garlock would regularly pass the floor to Michael Redmond, while asking Redmond to provide his expert commentary as a Go professional. Therefore, Garlock sometimes explicitly invoked the audience: ‘But I think people wanna

know what is, what is happening with the game right now? [...] Is this territory yet?’ (Google DeepMind, 2016, at 01:15:49–59). Redmond, then, would go on to elaborate on the ‘internal’ context of the game, as it was progressively constituted by the alternating moves by the two players in the ‘game room’ (see Excerpt 1). For this purpose, Redmond would use the teaching board, set up in the ‘commentator room’ (see Excerpt 2, on the left-hand side).<sup>7</sup>

Taken together, the two contextualizations aimed at offering adequate commentaries of the unfolding game and its particular staging to viewers, while articulating the relevant background for any upcoming move, commentary, or question. Hence, ‘move 37 in game two’ constituted an anomalous figure, and manifest surprise for the expert commentators, precisely against that background (i.e., ‘game two, as commented thus far’). As Excerpt 3 suggests, Redmond continued to comment on the overall game situation in terms of local territorial trade-offs, elaborating his commentary on White’s area to the right (from line 1 onwards), in the same register as the one proposed by Garlock’s prior question: ‘Is this territory yet?’. However, Black’s next move (its ominous move 37) undercut Redmond’s territorial commentary (see Excerpt 3, at lines 5–7, #1), thus calling into question its background conjecture (regarding continued local trade-offs), if not his expert status (for a similar case, see Mondada, 2011).

The transcribed excerpt further documents how the instant mismatch between tentative conjecture and unfolding game came about. The excerpt (and the transcribed overlap of commentary and activity in particular) show Black’s move 37 being played into an area of the Go board by *AlphaGo* at the very moment (lines 5–7, #1) Redmond, the Go professional in the commentator room, had started to explain why (for three ‘territorial’ reasons) it would *not* be good to play in just that area (see [1], [2], [3] in Excerpt 3). Throughout, Redmond had been commenting on *White*’s limited territory (in answer to Garlock’s initial question), thus manifestly not anticipating *Black*’s move into just that territory (a move implied as ‘counter-intuitive’, insofar as the small White territory on the right-hand side [1] wouldn’t constitute an interesting ‘catch’ for Black either).<sup>8</sup>

<p>1 MR this <u>territory</u> [1] is going to be sort of confined to the third 2 and fourth line, it’s not gonna spread out into the center, 3 because of these black stones [2] in the way, and so. the value 4 here is relatively slo- small, because of it doesn’t. spread out. 5 and also because these (white) stones [3]. 6 AG ((plays out Black 37)) 7 #1</p>		<p>((left-hand side: front shot of commentator room, showing MR commenting with help of teaching board))  ((right-hand side: simultaneous top-down shot on Go board in game room, with Aja Huang’s hand playing out AG’s move 37))</p>
<p>#1 ((MR comments, AG plays move 37))</p>		
<p>8 MR if black chose to. play a lot of moves on the right side. he would 9 not have the added value of having eh, say, an attack on this 10 (white) group [3] because it is so strong. 11 [...]</p>		

**Excerpt 3.** Detailed transcript of *AlphaGo*’s ‘move 37’ (right) during game commentary (left) (Image credit: drawing based on Estrada, 2016, and Google DeepMind, 2016).

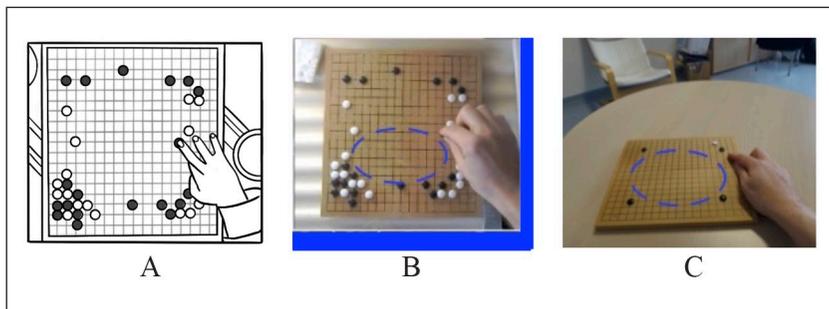
As indicated from the outset, the game commentators noticed the mismatch between Redmond's conjecture and the actual move—*AlphaGo*'s 'move 37'—only a few moments later in the game ('ooh') and, as described above, they did so on the one-sided basis of their game commentary thus far (i.e., from a White territorial perspective). Eventually, Redmond would start reframing his commentary in line with *Black*'s move 37 and, in so doing, alluded to the alternative principle of play exhibited by that move (i.e., 'power play', which I noticed only via a reenactment, and we shall consider below). That said, both the initial noticing and running commentary by Redmond and Garlock presupposed that a recognizable game was underway and a special move had been played out, a largely visual presupposition to which the next section will turn.

*Go game constitution: 'Move 37' reenacted, three 'tutorial problems'.* How was the Go game recognizably played out as such? The preceding analysis hinged on its scenic intelligibility as a bilateral encounter between two regular (if unusual) Go players. So did its expert commentary and livestream broadcast. Of the interfacing practices mentioned, the running commentary has been analyzed so far, while 'embodied play' remains to be explicated: How was the Go game played out so that it could be *recognized* as such? How was it played out so that, through its split-screen livestream, it lent itself to be dramatized? And how was its remote audience addressed in the process? This section sets out with focusing on embodied play, before turning to live montage, as a third interfacing practice. To do so, the section draws upon a practical reenactment of the move 37 episode analyzed so far.

In particular, we shall home in on embodied play as a scenic condition for both game commentary (as examined above) and live montage (as examined below). For the purpose, I teamed up with a colleague, who would read Garlock's commentary and play Aja's hand (playing *AlphaGo*) at once, while I reenacted the commenting part of Redmond, the Go professional/expert commentator at the teaching board. Multiple coordination problems ensued. Here, we shall focus on three 'tutorial problems'—that is, problems that, when encountered, disclose 'members' discipline-specific procedures' (Garfinkel, 2002, p. 145), including members' methods for playing out 'move 37 in game two' as a recognizable Go move, and a particularly well-played one at that. A reflexive explication of the move's embodied delivery is thus offered for reconsidering the preceding transcript-based video analysis, as well as for examining its (i.e., the move's) swiftly dramatized display.

*Tutorial problem 1: Aja's te-tsuki.* The game of Go has been alluded to as 'two hands talking' (Koji, 1988). This suggestive allusion was largely ignored by our transcript-based video analysis so far, given its focus on verbal game commentary. The initial media coverage of the exhibition match didn't pause on this 'manual conversation' either—that is, the gestures through which the exhibition match was progressively played out, and initially constituted as such. However, the gestures' consequences, as in the case of move 37, were sometimes noted: 'Redmond, a top Go player, squint[ed] in disbelief at the match's live video feed [i.e., on his control screen] [and] a clearly rattled Sedol [seemingly] left the room, returning a few minutes later, and taking 15 minutes for his next move' (Mennick, 2016). In turn, the reenactment of 'move 37 in game two' (see Figure 1B) leads one to notice the embodied practice in terms of which 'game two', and

‘move 37’ in particular (see Figure 1A), were played out, displaying conventional Go skill, rather than ‘completely new [Go] knowledge’ (as initially claimed on DeepMind’s *AlphaGo* website). Indeed, ‘move 37 in game two’ displayed conventional Go skill in at least two respects.



**Figure 1. (A–C)** Noticing ‘Aja’s te-tsuki’ by reenacting AlphaGo’s move 37.

On the one hand, the gesture with which Aja played out *AlphaGo*’s move 37 (see Figure 1A) should be noted, and reexamined. Indeed, he manifestly not only enacted a conventional 手つき (*te-tsuki*), as the physical gesture of playing Go moves is named in Japanese (where the Go stone is held between the index and middle finger as shown), but he also did it so confidently that *AlphaGo*’s Black stone made a quick left-right move on the Go board, a horizontal slip due to the finger pressure with which it was slammed on the board: ‘clack!’ (in contrast to our silent reenactment, via soft touch and clumsy gesture, see Figure 1B).

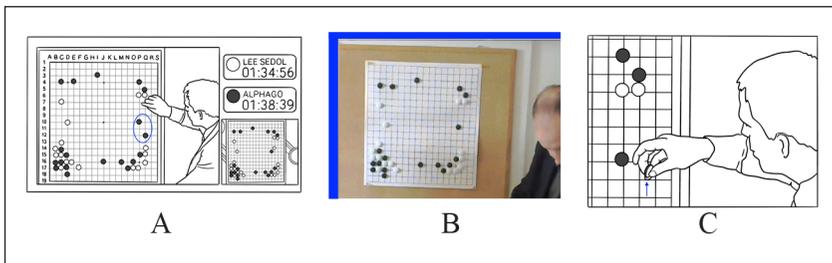
On the other hand, it can be noticed that move 37 exhibited a classic principle of ‘power play’ in Go (see Figure 1B), namely the principle according to which one should exert influence over the whole board (as indicated by the dotted line, potentially surrounding a large area by *AlphaGo*’s Black stones), and not only in local terms of smaller configurations of equal territorial exchange, as initially commented upon by Redmond (see Kajiwara, 1979, pp. 22–24). A reenactment of the opening in a prior teaching game reminded me of this principle which, if enacted, allows one to tilt the game in one’s favor by connecting one’s next move with one’s prior stones across the board at the expense of the opponent’s potential territorial claims (see Black vs. White in Figure 1C). Eventually, Redmond was also noticing this principle to be at play in the exhibition match, at least as far as ‘move 37 in game two’ was concerned. As he put it subsequently to the analyzed episode, and by using Kajiwara’s term: ‘the *direction of play* does not seem so unreasonable’.<sup>9</sup>

*Tutorial problem 2: Mike’s flip.* In contrast to mainstream media coverage (further examined below), our video analysis made explicit how the surprising character of ‘move 37 in game two’ appeared in contrast to the running expert commentary of ‘game two’ *in situ*, rather than as part of (computer) Go history to begin with, if not the history of humanity altogether (as initially suggested on DeepMind’s *AlphaGo* website). In particular, Black’s move 37 called into question the local territorial reading in terms of which Redmond had been commenting on White’s game up to the move’s delivery, a reading that emphasized successive configurations of equal territorial exchange

(so-called ‘josekis’), rather than a seemingly unconventional move (such as *AlphaGo*’s move 37) that would tilt the exchange in one’s favor on a more global scale, across the board (via a ‘duck/rabbit’ Gestalt-switch, as described in note 9).

As I reenacted Redmond’s commentary, I also noticed the *embodied (re-)play* that his expert commentary relied upon, both conditioning and contributing to its verbal articulation.

To articulate the commentary ‘if Black chose to play a lot of moves on the right side, he would not have the added value of having an attack on this (white) group [3] because it is so strong’ (Excerpt 3, lines 8–10), Redmond did—for instance—swiftly remove White and Black stones from the teaching board and then reposition them to show a relevant two-stone variation (see Figure 2A). Just how? As I first reenacted his commentary and its accompanying gestures, I quickly was confronted with the following puzzle: ‘where does the additional Black stone come from!?’ Indeed, I had just taken off a White and a Black stone from my teaching board, as Redmond initially had done, but now needed *two* Black stones to show the relevant variation on the teaching board (see Figure 2B), as Redmond somehow had managed to do (without grasping a supplementary Black stone in the supply box).

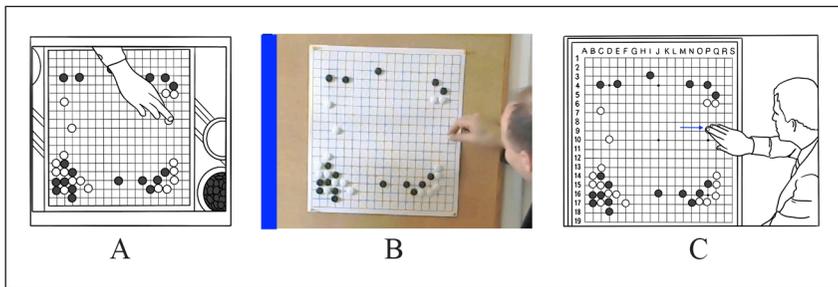


**Figure 2. (A–C)** Noticing ‘Mike’s flip’ (original stone flip) by reenacting two-stone variation.

Upon re-inspecting the ‘Move 37!!’ video clip, I noticed that Redmond’s teaching stones had two faces: one White, the other Black. This two-faced character of teaching stones, then, had allowed him to flip around the White stone to turn it Black (i.e., ‘Mike’s flip’, see Figure 2C), and thus to become able to show the relevant variation on the teaching board: Black’s *prima facie* pointless ‘moves [...] on the right side’ (Figure 2A). However, the problem encountered in attempting to reenact Redmond’s expository gestures proved ‘tutorial’, not only insofar as it highlighted the tacit teaching skill—the tacit use of the magnetic board to remove, flip, and reposition stones—on which his territorial commentary relied. Moreover, the problematic reenactment allowed me, and now allows us, to tease out the *local historicity* of the ‘instant mismatch’ between Go commentary and game play—that is, its locally unfolding, if practically distributed, historicity. Indeed, only his tacit teaching skill allowed Redmond to swiftly formulate the (in his view) unlikely game variation in the conditional, as a counterfactual (‘if Black chose to play...’), *at the very moment* a similar game variation had manifestly been played out by Black, as a fact (as Aja had already placed *AlphaGo*’s move 37, Figures 1A and 2A). The viewer’s sense of an ‘instant mismatch’—as previously noted (see Excerpts 2 and 3

above), but reflexively explicated now—hinged upon the temporally contingent coproduction of the mismatch and visually implicated Gestalt-switch *in situ*.

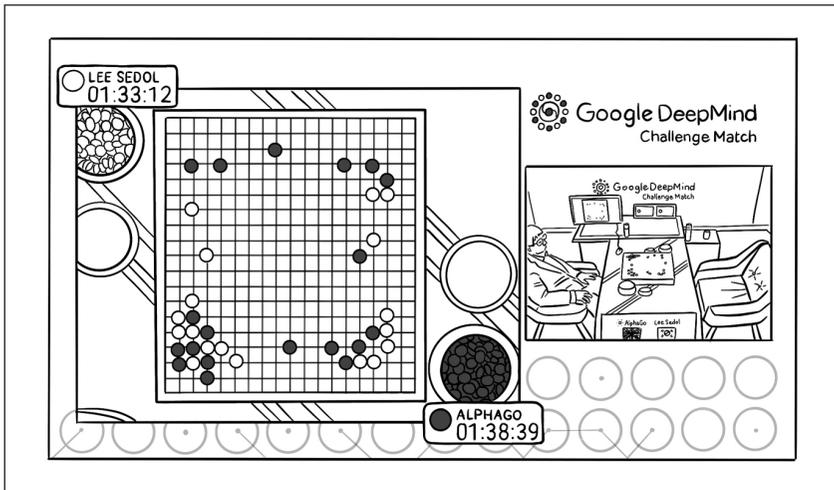
*Tutorial problem 3: Lee's overlooked gote.* To exert 'power in Go', simply put, is to exert influence over the Go board as a whole, tilting the exchange balance of potential territories in one's favor. Although forcing moves (also known as 'sente' moves) may remain inefficient, every exertion of power in Go requires at least one, if not several, such forcing moves in a sequence. Importantly, these forcing moves go beyond and challenge conventional equal territory exchanges ('joseki'), as indeed 'move 37 in game two' of the exhibition match manifestly did. However, as an ordinary conversation requires at least two interlocutors, so do the 'two hands talking' in terms of which Go may be alluded to. Consequently, one interlocutor or Go opponent may facilitate the exertion of power (and territorial claims) by the other. Just how? Simply put, he or she might do so by *refraining* from playing a forcing move him- or herself, thus 'giving up the initiative' and playing a so-called 'gote' move instead (as it is referred to in Go vernacular). And that is what Lee Sedol actually, if hesitantly, did at 'move 36' (see Figure 3A; Google DeepMind, 2016, at 01:16:32–33).<sup>10</sup>



**Figure 3. (A–C)** Noticing 'Lee's gote' (originally overlooked at move 36) by reenacting move 36.

However, I noticed Lee's 'move 36' as such—that is, as a 'gote' move leaving the initiative to *AlphaGo*—only practically and retrospectively, after having replayed and reflected upon Redmond's commentary (which had required two Black stones, see Figure 2 above) and his subsequent repositioning of Lee's 'move 36' (as the 'flipped' White one used for his commentary, see Figure 2C). First, I noticed its *required* character for move 37 to be possible at all, only in and after replaying Redmond's repositioning of Lee's 'move 36' on the teaching board (Figure 3B). In the move's course, I noticed the 'empty field' which the board would have constituted without White's 'move 36' (i.e., as the move Black would have to respond to). Second, this reenactment invited me, and now us, to reexamine Redmond's commentary of 'move 36' as being a 'natural extension' of the 'joseki' variation (i.e., an equal territorial exchange) played out in and around the upper right corner area (Figure 3C). As Redmond put it, 'White naturally plays the follow-up move [36] here' (see arrow, in Figure 3C; Google DeepMind, 2016, at 01:17:34–01:18:04). Third, Redmond's territorial commentary, regarding Lee's 'move 36', manifestly overlooked its 'gote' character—that is, the consequential character of 'move 36', insofar as Lee by playing it out had ceded the initiative to *AlphaGo* (thus in a position of 'power play'). Taken together, these three aspects configured the ground for

*AlphaGo*'s move 37 to appear as a particularly 'powerful' move (Figure 1A), if not as an 'intelligent', 'creative', or even 'cosmic' move in (computer) Go, as rapidly suggested by anchor journalist Garlock, and further elaborated in media discourse.<sup>11</sup>



**Excerpt 4.** Lee Sedol's 'empty chair' dramatized as due to *AlphaGo*'s 'move 37' (Image credit: drawing based on Estrada, 2016, and Google DeepMind, 2016).

### *Algorithmic drama: AlphaGo's 'move 37', the media's astounding complex*

This section returns to the March 2016 headlines of major news outlets in the US and the UK as they reported on the four-games-to-one win by *AlphaGo* over Lee Sedol, before reconsidering media coverage of 'move 37 in game two' more specifically. By and large, mainstream media coverage both relied upon and effaced the interfacing practices that constituted the *AlphaGo show* as an intelligible encounter, including its embodied performance, running commentary, and live montage. In a nutshell, the media 'drama of the powerful yet inscrutable algorithm' (Ziewitz, 2016, p. 6), at least in its initial Anglo-Saxon articulation, hinged upon a peculiar imbalance: the imbalance between interpretive emphasis on the 'astounding complex', the game (move) that escapes 'traditional cosmology' (Goffman, 1974, pp. 28–29), and conspicuous lack of 'game reading' in conventional Go terms (i.e., the game's basic rules, constitutive and preferential, its territorial commentary, embodied play, and so on). In other words, media coverage took for granted that a game of Go had been played, despite or precisely because of the intricate interfacing that its scenic intelligibility relied upon.<sup>12</sup>

Consider the following news headlines, the day *AlphaGo*'s win was sealed:

#### **Google's Computer Program Beats Lee Se-dol [sic] in Go Tournament**

SEOUL, South Korea — Ending what was billed as the match of the century, a Google computer program defeated a South Korean master of Go, an ancient board game renowned for its

complexity, in their last face-off on Tuesday. The program AlphaGo's 4–1 victory was a historic stride for computer programmers and artificial intelligence researchers trying to create software that can outwit humans in board games. (Sang-Hun, *New York Times*, 15 March 2016)

### **AlphaGo seals 4–1 victory over Go grandmaster Lee Sedol**

DeepMind's artificial intelligence astonishes fans to defeat human opponent and offers evidence computer software has mastered a major challenge. Google DeepMind's AlphaGo program triumphed in its final game against South Korean Go grandmaster Lee Sedol to win the series 4–1, providing further evidence of the landmark achievement for an artificial intelligence program. (Borowiec, *The Guardian*, 15 March 2016)

### **Google's DeepMind wins historic Go contest 4–1**

DeepMind's AlphaGo artificial intelligence has won the final match of the Go series against world champion Lee Sedol. During a week long competition in South Korea, the AI from the London-based company forced Go world champion Lee Se-dol [sic] to admit defeat in almost every match played. The final match, which lasted around five hours, saw Lee resign as it reached its conclusion. DeepMind's AlphaGo AI made an early error but managed to recover to clinch victory. (Burgess, *Wired Magazine*, 15 March 2016)

All of the above headlines reported on the final score of the *AlphaGo show* and, in so doing, took for granted that a Go game actually had been played. Media coverage thus variously referred to the encounter as a 'Go Tournament' (*New York Times*), a 'game series' (*The Guardian*), a 'Go contest' (*Wired Magazine*). As we have seen, the most basic *constitutive rule* in Go requires each of its two opponents to place their stones on the Go board to form either Black or White 'territories'. In reporting on the exhibition match and its overall result, media coverage assumed this rule to operate. Otherwise, the game could not be seen as such, let alone reported on as a sensation, the (constitutive) rule providing an 'embedded instruction [...] for seeing and describing [game] order' (Wieder, 1974, p. 172).

The prior section explicated (some of) the 'human/machine interfacing' methods that made this 'symmetry spectacle' intelligible, if not plausible (i.e., as a technology demonstration). Refraining from doing so, as the initial news reports did, provided them in turn with an instant opportunity for (algorithmic) dramatization, highlighting the protagonists' doubts and certitudes, respectively: 'It made me question human creativity' (Sedol's press conference statement, quoted in the *New York Times*); 'AlphaGo wins game 5! One of the most incredible games ever' (Hassabis's tweet, reported both by *The Guardian* and *Wired Magazine*). Ironically, the unquestioned spectacle of the exhibition match makes the subsequently unconditional reporting of the 'astounding complex' (Goffman, 1974, pp. 28–29) understandable, yet all the more intriguing.<sup>13</sup>

Reconsider the following two comments on 'move 37 in game two', both of which (echoing Goffman) cast it as an 'event that apparently cannot be managed within the traditional cosmology':

### In two moves, AlphaGo and Lee Sedol redefined the future

SEOUL, SOUTH KOREA—In Game Two, the Google machine made a move that no human ever would. And it was beautiful. As the world looked on, the move [move 37] so perfectly demonstrated the enormously powerful and rather mysterious talents of modern artificial intelligence. But in Game Four, the human made a move that no machine would ever expect. And it [move 78] was beautiful too. Indeed, it was just as beautiful as the move from the Google machine—no less and no more. (Metz, *Wired Magazine*, 16 March 2016)

#### Move 37: Artificial Intelligence, Randomness, and Creativity

[...] The [‘unsupervised machine learning training’] period meant that AlphaGo could develop its own style of play and would not rely simply on regurgitating moves from a database. This was most evident during the second match between Sedol and AlphaGo, when, on move 37, the computer made a very unusual move. There had been several odd moves in the tournament until that point, but move 37 caused one of the English-language live commentators, Michael Redmond, a top Go player, to squint in disbelief at the match’s live video feed. ‘That’s a very surprising move’[,] he said, his head pivoting back and forth between the board and the monitor, making sure he did not get it wrong. At that moment, a clearly rattled Sedol left the room, returning a few minutes later, and taking 15 minutes for his next move’. (Mennick, *Mousse Magazine*, 1 April 2016)

Taking for granted the *AlphaGo show* as a Go game, the two magazine articles, more extensively quoted above, elaborate on the significance of ‘move 37 in game two’. Just as the initial media reports assumed a basic rule of Go as its (and their) constitutive ground, the articles above assume *preference rules* to operate, rules that determine ‘good play’ in the reported game of Go. Otherwise, *AlphaGo*’s ‘move 37 in game two’ could not be dramatized as ‘beautiful’, ‘powerful’, and ‘mysterious’, let alone be claimed as the ‘no[n] human’ equivalent to one of Lee Sedol’s subsequent moves or as having developed its ‘own style of play’. In trading upon the technology demonstration and its scenic intelligibility as a Go game, media coverage thus dramatized the program as a ‘superhuman intelligence’, if only by highlighting its mysterious character or taking for granted its livestream broadcast.<sup>14</sup>

### Discussion: Skillfully embodied play as pivotal interfacing practice?

‘It should be obvious that the human body [...] will figure in the issue of frame maintenance’

(Goffman, 1974, p. 36).

In *Frame Analysis*, Goffman made the above suggestion with respect to social interaction in everyday life, and how its embodied character could not but frame its practical intelligibility (i.e., how a given activity or stretch of interaction is to be understood). In the present case, embodied play proved part of an intricate mix of interfacing practices though, inviting us to reconsider Goffman’s suggestion (if not the concept of body itself, ‘human’ or other). How did embodied play prove ‘pivotal’ from within that intricate mix? The adverb ‘skillfully’ glosses the answer. It may be further developed and

discussed by taking a closer look at the live montage of the *AlphaGo show*, which both presupposed and framed the encounter as a recognizable game in Go, including its running commentary.

As noted from the outset, the live montage of the *AlphaGo show* drew on a conventional format of Go game broadcasting—that is, the split-screen of commentator room and game room (Mondada, 2009). At the same time, it drew on two general principles of TV production—that is, to provide for ‘spatial intelligibility of filmed action’ and to ‘keep out of sight production infrastructure’ (Broth, 2014). As a pervasive interfacing practice, then, the live montage both connected and distanced, foregrounded and backgrounded, things, persons, and players for the viewer. The conventional split-screen foregrounded the Go game underway (Excerpt 2), while its production infrastructure was kept out of sight: the ‘control room’ of the *Google DeepMind* IT crew (Kohs, 2017), as well as that of the TV production crew. As a scenic result, the *AlphaGo show* could appear as one and the same Go game (introduced and elaborated by its running commentary, and vice-versa), in line with intended viewers’ habits, presumably accustomed to general TV production principles, from watching other sports too (e.g., Perry et al., 2014).<sup>15</sup>

Yet the live montage, if constituting a necessary condition for the game to be shown (as a ‘Go game’, ‘historic showdown’, etc.), did not offer a sufficient condition for its scenic intelligibility to be determined (regarding its ‘Go moves’, as successively played out and commented upon). The split-screen allowed one to view the exhibition match as a coherent activity, yet only insofar and as long as it was played out and commented upon in its course. In other words, the interfacing practices examined—embodied play, running commentary, and live montage—traded upon and elaborated each other: ‘the camera[s] [anticipated] and adjust[ed] to the action in a *reflexive relationship* in which camerawork and recorded action mutually configure each other’ (Broth et al., 2014, p. 17; emphasis added). In this respect, the case at hand proved of particular interest on two counts.

First, it allowed us to describe how game commentary and embodied play constituted ‘move 37 in game two’ in and for the split-screen livestreaming. The move’s ‘surprising’, if not ‘powerful’, character appeared as the scenic result of a professional commentary/play mismatch, a *Gestalt* mismatch that hinged upon commentary in one idiom (i.e., ‘White territory’) and play in another (i.e., ‘Black power’). The tentative reenactment of move 37 and game commentary allowed us to qualify the mismatch, not in terms of ‘completely new knowledge’ (*Google DeepMind*, 2018), but as displaying conventional Go skill (e.g., ‘power play’ à la Kajiwara, 1979), in and through the game interaction it was part of (i.e., following Lee Sedol giving up the initiative). Second, the live montage of move 37 and its professional commentary reflexively reshaped the episode by taking its cue from the dramatizing commentary (i.e., Lee Sedol supposedly having left the game room due *AlphaGo*’s forceful ‘surprise move’), rather than its mundane occurrence due to the commentary/play mismatch. Interestingly, when Aja Huang slammed move 37 on the Go board, Lee Sedol was already taking his smoke outside. Aja’s slamming move can thus be heard and seen as ‘pivotal’, prefiguring its subsequent dramatization, as if to bring back commentators—and viewers—to the unfolding game: the *AlphaGo show*. At the same time, Aja’s slamming move—played out on behalf of the *AlphaGo* program, during its opponent’s smoking break—hints at additional, if alternative research directions.<sup>16</sup>

In short, ‘object agency’—although it could lead to ‘algorithmic drama’—didn’t have to. And when it did, this happened to be in the hands of interacting participants, both literally and figuratively, rather than determined by an invisible technology, digital infrastructure or indeed live montage per se.

## Conclusion

It is one thing to note that ‘artificial intelligence’, including its newer forms of machine learning, rely upon a common legacy of technology demonstrations and ‘deceitful media’ (Natale, 2021). It is quite another to describe how this legacy is brought into play *in situ*, let alone to explicate how media demonstrate ‘AI’ performance *in vivo* (e.g., *AlphaGo*’s move 37, as a powerful Go move). The same argument applies to ‘human/machine interfacing’ (Lipp & Dickel, 2022), insofar as its relational genealogy, for it to become operative (e.g., in a technology demonstration), needs to be locally performed and practically sustained (e.g., as an exhibition match). And the argument *a fortiori* applies to narrative interpretations in terms of ‘social drama’ (Binder, 2021), ‘enchanted determinism’ (Campolo & Crawford, 2020) or ‘technological myths’ (Natale & Ballatore, 2020).<sup>17</sup>

Drawing upon a reflexive video analysis, this article explicated skillfully embodied play as a pivotal interfacing practice, enabling the *AlphaGo* technology demonstration, while being reshaped by its expert commentary and split-screen livestreaming, and thereby contributing to framing subsequent media discourse (if not narrative scholarly interpretation). What broader STS implications are to be drawn out from this relocated media analysis of ‘machine intelligence’ as multifaceted technology demonstration? The article’s three key findings may be summarized as follows. Each of them suggests broader implications, both with respect to and beyond STS analysis of ‘human/machine interfacing’.

First, the asymmetry highlighted by media coverage—that is, the asymmetry of Lee Sedol, the ‘Federer of Go’ (Hassabis, 2017), being dominated by *AlphaGo*, the stunningly powerful Go program—hinged upon the situated coproduction of a symmetry spectacle, namely the exhibition match in Go, staged as a bilateral encounter between two opponent players, indulging in the game in terms of its basic rules and recognizable moves. This assumption, at times, was challenged by analogy (‘Usain Bolt vs. new F1–Ferrari’) as constituting a false equivalency and, at times, it was nuanced (‘it’s not just man vs. machine’, but ‘the machine was built by people, so it’s all very complicated’). Neither challenge nor nuance seemed to change the symmetry assumption though, let alone media coverage on ‘move 37 in game two’. To the contrary, as the first media reports largely took for granted that game framing, subsequent journalistic commentaries would tacitly ground sensational single move and/or historical elaborations on it.

Second, the article probed the reflexive constitution of object agency—that is, how the participants’ actions, both embodied and involving talk, constituted ‘*AlphaGo*’s move 37 in game two’. As it was confidently played out, *Aja*’s *te-tsuki* produced the move’s visibility, its scenic intelligibility, in terms of ‘power play’. In turn, *Mike*’s *flip* at the teaching board accentuated the game’s visibility in territorial terms, exhibiting a temporarily incommensurable scene—in short, an ‘instant mismatch’ between the played out move and just offered commentary. By previously ceding the game initiative, *Lee*’s *gote*

in move 36 had already invited his opponent to retake the initiative. As Lee's gote was not commented upon, *AlphaGo*'s subsequent move could and would appear as a stunning surprise (all the more so perhaps given the expert's silence on Lee's gote). Taken together, these game moves and conversational turns, while being broadcast and in the way they were broadcast, demonstrate how the participants' actions, those participants staffing the scene, provide(d) for recognizable 'object agency' in Go terms to begin with.

Finally, we may note that the described practices of 'human/machine interfacing' concomitantly obfuscated the constitutive coproduction of '*AlphaGo*'s move 37 in game two'. Embodied play, running commentary, and live montage, they all involved one form or other of 'banal deception' (Natale, 2021, p. 7). Enabling the technology demonstration, skillfully embodied play resembled the stage magician's deceptively 'acted naturalness' on stage, as part of the 'arrangement that worked the trick' (Smith, 2015, p. 330), if only insofar as Aja Huang played *AlphaGo* without this being highlighted or the production infrastructure being foregrounded. Similarly, the running commentary of the *AlphaGo show* largely took for granted its scenic intelligibility as a Go game. Occasionally, the commentary led to 'algorithmic dramatization' (e.g., Sedol's 'empty chair' dramatized as due to *AlphaGo*'s move 37). Finally, the live montage of the exhibition match, in addition to counting on the unfolding game, contributed to occasional dramatization, if only by tying split-screen montage to speculative journalistic commentary (e.g., 'he left the room because of [move 37]'), rather than cautious game analysis (e.g., the 'direction of play does not seem unreasonable').

This article started out with noting the dramatic change brought about by the *AlphaGo show* in early March 2016. At the Four Seasons Hotel in Seoul, South Korea, *AlphaGo*, the most sophisticated Go program at the time, beat Lee Sedol, an internationally top-ranked Go professional, by four games to one. In so doing, the *Google DeepMind* research team behind the *AlphaGo* program had realized a 'landmark achievement', as the columnist from *The Guardian* put it. To have a computer program beat a professional Go player, for decades, was seen as and proved to be out of computational reach (e.g., in contrast to having a program win at chess). Unsurprisingly, *AlphaGo*'s momentous win renewed both Go and 'AI' expertise, while nurturing media coverage and popular imagination. In turn, the crux of this article was different, namely: to demonstrate how and why a technology demonstration—the *AlphaGo show*—should not be reduced to its technical aspect or production infrastructure alone, but also described in its scenic performance and through its live montage. In so doing, the article respecified (some) 'human/machine interfacing' practices in terms of their mundane methods—verbal, embodied, and instrumental—as they were put to a particular purpose. 'Establishing [that] phenomenon' (Merton, 1987)—the recognizable production of *AlphaGo*'s 'move 37', in and through its demonstrative methods—was the core concern of the present paper. Ethnomethodological or otherwise empirical respecification of related topics—beyond the scope of this article—may contribute to a 'longer trajectory of deceitful media' (Natale, 2021, p. 32), while including perhaps similar 'distributed measuring bodies' (Hoel & Carusi, 2018) and 'cooperative media practices' (Schüttpelz, 2023).

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## Notes

1. The quote in the epigraph illustrates the (still) ‘still-neglected situation’ (Quéré, 1998). Indeed, the ‘Google Machine’ (aka the *AlphaGo* program) is praised for its technological achievement per se, rather than being described as the ‘montage effect’ of its situated performance and livestream broadcast (more of which below). For a similar argument from a media historical perspective, see Natale (2021).
2. Is this to say that ‘narratives around such games, when they are performed for a public audience, serve to obfuscate the true state of the [research] field’ (Elish & boyd, 2018, p. 64)? In a recent discussion, Campolo and Crawford (2020) examine the discourse of ‘enchanted determinism’ associated with new forms of ‘AI’, even or especially when their digital operation and its automated optimization produce statistically reliable results. In contrast to their critical discussion, Goode (2018) highlights ‘evocative narratives’ as a formative starting point for public engagement with ‘AI’. Neither discussion describes demonstrations of ‘AI’-labeled technologies *in situ*, at least not in terms of their intricate praxeology and its reflexive deployment, let alone their livestream broadcast and its tacit reliance on embodied practice *in vivo*. Mair et al. (2020) analyze the interpretations and confusions potentiated by this omission.
3. Case studies of technology demonstrations in commercial settings, sometimes akin to ‘stage magic’ (Smith, 2015), have taken inspiration from classic STS work on experimentation and demonstration in the natural sciences (e.g., Collins, 1988). The same holds for video analysis of instructional settings (e.g., Sherman Heckler, 2011) and their dramaturgical aspects (Greiffenhagen & Sharrock, 2011).
4. The hesitating question quoted above was put by the journalist commentator, Chris Garlock, to the co-present Go professional, Michael Redmond, as they just had noticed ‘move 37’ in the English-speaking commentator room at the match venue. For the canonical account of ‘cosmic Go’, see Masaki (1993/1997).
5. On YouTube, the videos in question are entitled ‘Move 37!! Lee Sedol vs AlphaGo Match 2’ (Estrada, 2016) and ‘Match 2—Google DeepMind Challenge Match: Lee Sedol vs AlphaGo’ (Google DeepMind, 2016). By June 2023, they had received about 130’000 and almost

1.5 million views, respectively. For updated documentation, see also the website of *Google DeepMind* (2023).

6. In a prior ethnography of amateur Go (Sormani, 2015), I challenged STS for missing out on the situated coproduction of skilled practice, technical mediation, and social order. Conversely, this article brings to bear ethnomethodological analysis on the definition, description, and discussion of that multifaceted phenomenon as an empirical interest in STS.
7. In turn, the rules of Go were by and large presupposed. For the present game, *AlphaGo* was given the black stones ('Black'), Lee Sedol the white ones ('White'). Simply put, players take turns to place their stones (i.e., make their 'moves'), while attempting to create a comparatively larger territory on the Go board. This is done by connecting one's stones and disconnecting the opponent's stones. 'Territories' then are typically formed as 'free spaces' behind a line or inside a circle of one's connected stones. For basic Go rules and more details on 'how to play', see BGA (2021).
8. Redmond's reasons, as well as the ways in which he gave them, merit further attention, both regarding the preference rules (such as 'stay away from strong groups' [2, 3]) that they elaborate and their qualified character (e.g., by adverbs, such as 'relatively', Excerpt 3, line 4, or 'provisionally' in Redmond's previous answer—'provisionally, it's territory'—to Garlock's initial question). In conversational terms, it is worth noting how Redmond is 'skip-connecting' (Sacks, 1992, p. 349) his verbal commentary—that is, by 'connecting' his comments on White moves, while 'skipping' prior and subsequent Black moves (and/or commenting on them only from a White territorial perspective). In the Go literature, preference rules are explained via 'proverbs' (Sogoe, 1960) or 'principles' (Hideo, 1992/2002). For the transcription conventions of Excerpt 3, see Appendix.
9. In *Gestalt* terms, Redmond had been commenting a White 'duck' (i.e., Lee Sedol's local territory), while and until Aja Huang played out a Black 'rabbit' (i.e., *AlphaGo*'s powerful move). This Gestalt-switch, I only noticed in and through the reenactment of 'move 37', enabling us to specify the visual grounds for the noted surprise ('ooh'), in addition to its preceding commentary. In his post-game commentary of 'move 37', Fan Hui, the Chinese professional and European champion who assisted *Google DeepMind* in 'training' *AlphaGo*, quotes an old Chinese saying—'A beginner plays the corners, an average player the sides; but a master controls the center' (Hui, 2018, p. 13)—while suggesting that the saying applies to *AlphaGo*'s 'move 37'. Current professional play, he adds, has moved in the opposite direction. On *AlphaGo*'s 'new territorial style', see Zhou (2017).
10. Lee's hesitation appeared in his gesture, as he paused (1s or so) before placing his White stone on the Go board. Once placed, he gave it a light tap (as if to wish it 'good luck'). Contrast his hesitant *te-tsuki* (for 'move 36') with the confident one made by Aja for *AlphaGo* (by slamming its 'move 37' on the board, Figure 1A). A further mark of hesitation (or at least of ceding the initiative) appears to be that Lee, after having played 'move 36' (but *before* 'move 37' was being played), left the game room for a smoke on one of the Hotel terraces specifically being reserved at the Four Seasons for this purpose (Kohs, 2017). This course of events is not only contrary to Mennick's (2016), Binder's (2021) and Curran et al.'s (2020) accounts, but also to the live commentary by Garlock and Redmond (Google DeepMind, 2016, 01:19:37- ). The latter misinterpreted, if inadvertently, Lee's empty chair as the telling result of *AlphaGo*'s forceful 'surprise move' (ibid.), a misinterpretation that was swiftly dramatized by the live montage: the split-screen livestream showing the empty chair in the game room (see Excerpt 4).
11. Again, the reenactment had me (or arguably any other amateur player in Go) notice how from within embodied play 'move 37' could appear as a 'powerful move' in Go terms—that is, not only in contrast to a preceding game commentary, but also to a preceding game move (see

- also Schegloff 2007, pp. 20–21). Intriguingly, the persuasive character of embodied play, as a sequentially organized interfacing practice (having ‘move 37’ appear as a stunning *response* move in Go), hinged upon the continuous backstaging of the game’s production infrastructure (as further examined below).
12. Media analysis sometimes reproduces this irony, for example when contrasting *interpretations* of the event (e.g., by comparing its US American and Chinese media coverage, Curran et al., 2020), rather than examining the common *understanding* that enables comparison and interpretation (i.e., the presupposition of the *AlphaGo show* as a Go game).
  13. Game reporting, as it took for granted the scenic features of the reported event, may be considered ‘deceptive’, insofar as it [rendered] the *achievement* of a figure-ground arrangement [e.g., the AlphaGo show as a Go game] as the [sole] *properties* of [the resulting] *display* of a figure on its ground [i.e., the Go game]’ (Garfinkel, 2022, p. 166).
  14. Occasionally, the spectacle’s tricky achievement was challenged: ‘no offense taken, dear algorithm developers—but does it make much sense to simply compare Usain Bolt with a new Formula-1-Ferrari?’ (Käser, 2016). Similar deconstructions of arguably ‘false equivalences’ (a recurring topic of journalistic critique) are also to be found in the ‘AI’ research literature (e.g., Brooks, 2018; Lake et al., 2017).
  15. In some online fora, viewers also would comment on the commentators, Garlock and Redmond, suggesting that ‘talk as a broadcasting activity [...] if [often] taken for granted by media analysts’ (Hutchby, 2009, p. 3), wasn’t ignored by (computer) Go aficionados.
  16. In addition to the tacit dependency of academic match interpretation on dramatizing live montage (see note 10), readers may wish to revisit Goffman’s (1974, pp. 22–24) discussion of ‘guided doings’ in the context of ‘AI’ technology demonstration, including his reminder of the ‘easy distinction’ between a ‘clumsy move’ (disregarding game strategy) and a ‘move made clumsily’ (a failing physical gesture). Further research directions are indicated in conclusion. For the relative importance in film fiction of the ‘actor’s work and montage’, see Jayyusi (1988, pp. 278–79).
  17. This of course is *not* to claim that the *AlphaGo show* was set up in a cultural void or lacked preparatory staging. Its documentary movie, commissioned by *DeepMind*, offers many backstage glimpses of how PR staff not only appeared to be busy with ‘hiding the computer’, but also with ‘orchestrating the event’, not to mention the continuous dramatization of the event in terms of its anthropological implications (Kohs, 2017). For a recent ‘meta-narrative’, see Binder (2022).

## References

- BGA. (2021). How to play. *British Go Association*. Retrieved March 1, 2023, from <https://www.britgo.org/intro/intro2.html>
- Binder, W. (2021). AlphaGo’s deep play: Technological breakthrough as social drama. In J. Roberge & M. Castelle (Eds.), *The cultural life of machine learning* (pp. 167–195). Springer.
- Binder, W. (2022). Technology as (dis-)enchantment. AlphaGo and the meaning-making of artificial intelligence. *Cultural Sociology*. Advance online publication. <https://doi.org/10.1177/17499755221138720>
- Borowiec, S. (2016, March 15). AlphaGo seals 4-1 victory over Go grandmaster Lee Sedol. *The Guardian*. Retrieved March 1, 2023, from <https://www.theguardian.com/technology/2016/mar/15/googles-alpha-go-seals-4-1-victory-over-grandmaster-lee-sedol>
- Bory, P. (2019). Deep new: The shifting narratives of artificial intelligence from Deep Blue to AlphaGo. *Convergence: The International Journal of Research into New Media Technologies*, 25(4), 627–642.

- Broth, M. (2014). Pans, tilts, and zooms: Conventional camera gestures in TV production. In M. Broth, E. Laurier, & L. Mondada (Eds.), *Studies of video practices: Video at work* (pp. 63–96). Routledge.
- Broth, M., Laurier, E., & Mondada, L. (2014). Introducing video at work. In M. Broth, E. Laurier, & L. Mondada (Eds.), *Studies of video practices: Video at work* (pp. 1–29). Routledge.
- Brooks, R. (2018, July 15). Steps toward super intelligence IV, things to work on now. *Robots, AI, and Other Stuff*. Retrieved August 14, 2023, from <https://rodneybrooks.com/forai-steps-toward-super-intelligence-iv-things-to-work-on-now/>
- Burgess, M. (2016, March 15). Google’s DeepMind wins historic Go contest 4-1. *Wired Magazine*. Retrieved August 14, 2022, from <http://www.wired.co.uk/article/alphago-deepmind-google-wins-lee-sedol>
- Campolo, A., & Crawford, K. (2020). Enchanted determinism: power without responsibility in artificial intelligence. *Engaging Science, Technology, and Society*, 6, 1–19.
- Collins, H. (1988). Public experiments and displays of virtuosity: The core-set revisited. *Social Studies of Science*, 18, 725–748.
- Coopmans, C. (2011). ‘Face value’: New medical imaging software in commercial view. *Social Studies of Science*, 41(2), 155–176.
- Curran, N. M., Sun, J., & Hong, J. W. (2020). Anthropomorphizing AlphaGo: A content analysis of the framing of Google DeepMind’s AlphaGo in the Chinese and American press. *AI & Society*, 35, 727–735.
- Dreyfus, H. L. (1992). *What computers still can’t do: A critique of artificial reason*. MIT Press.
- Eisenmann, C., & Rawls, A. W. (2023). The continuity of Garfinkel’s approach: Seeking ways of ‘making the phenomenon available again’ through the experience and usefulness of ‘trouble’. In P. Sormani, & D. vom Lehn (Eds.), *The Anthem Companion to Harold Garfinkel* (pp. 19–41). Anthem Press.
- Elish, M. C., & boyd, d. (2018). Situating methods in the magic of Big Data and AI. *Communication Monographs*, 85(1), 57–80.
- Estrada, D. (2016, March 12). *Move 37!! Lee Sedol vs AlphaGo Match 2* [Video]. YouTube. Retrieved December 20, 2022, from <https://www.youtube.com/watch?v=JNrXgpSEEIE>
- Garfinkel, H. (2002). *Ethnomethodology’s program: Working out Durkheim’s aphorism* (A. W. Rawls, Ed. and Introd.). Rowman & Littlefield.
- Garfinkel, H. (2022). *Studies of work in the sciences* (M. Lynch, Ed. and Introd.). Routledge.
- Goffman, E. (1974). *Frame analysis: An essay on the organization of experience*. Harper & Row.
- Goode, L. (2018). Life, but not as we know it: A.I. and the popular imagination. *Critical Future Studies*, 10(2), 185–207.
- Google DeepMind. (2016, March 10) *Match 2 - Google DeepMind Challenge Match: Lee Sedol vs AlphaGo* [Video]. Youtube. Retrieved June 20, 2023, from <https://www.youtube.com/watch?v=l-GsfyVCBu0>
- Google DeepMind. (2018). AlphaGo: The story so far. Retrieved August 14, 2022, from <https://deepmind.com/research/case-studies/alphago-the-story-so-far>
- Google DeepMind. (2023). Highlighted research: AlphaGo. Retrieved June 20, 2022, from <https://deepmind.com/research/highlighted-research/alphago>
- Greiffenhagen, C., & Sharrock, W. (2011). Does mathematics look certain in the front, but fallible in the back? *Social Studies of Science*, 41(6), 839–866.
- Hassabis, D. (2017). Towards general artificial intelligence. *Keynote address given at Cambridge Society for the Application of Research, Cambridge Science Festival, University of Cambridge*, 20 March 2017. Retrieved August 14, 2022, from <https://www.youtube.com/watch?v=ZyUFy29z3Cw>
- Hideo, O. (2002) *Opening theory made easy: Twenty strategic principles to improve your opening game*. Kiseido. (Original work published 1992)

- Hoel, S., & Carusi, A. (2018). Merleau-Ponty and the measuring body. *Theory, Culture & Society*, 35(1), 45–70.
- Hui, F. (2018). Game 2: ‘Invention’—Commentary. *Google DeepMind Challenge Match, 8–15 March 2016. AlphaGo Match Summary*. Retrieved August 14, 2022, from <https://deepmind.com/alphago-korea>
- Hutchby, I. (2009). *Media talk: Conversation analysis and the study of broadcasting*. Open University Press.
- Jayyusi, L. (1988). Toward a socio-logic of the film text. *Semiotica*, 68(3/4), 271–296.
- Kajiwara, T. (1979). *The direction of play*. Kiseido.
- Käser, E. (2016, April 8). Ein unfairer Vergleich—Gastkommentar. *Neue Zürcher Zeitung*. Retrieved August 14, 2022, from <https://www.nzz.ch/meinung/kommentare/alpha-gos-scheinsieg-ueber-die-menschliche-intelligenz-ein-unfairer-vergleich-ld.12145?reduced=true>
- Kohs, G. (Director.). (2017). *AlphaGo* [Documentary Movie]. Moxie Pictures. Retrieved August 14, 2022, from <https://www.youtube.com/watch?v=WXuK6gekU1Y>
- Koji, N. (1988). Over a go board, two hands talking. *Japan Quarterly*, 35(3), 303–306.
- Lake, B. M., Ullman, T. D., Tenenbaum, J. B., & Gershman, S. J. (2017). Building machines that learn and think like people. *Behavioral and Brain Sciences*, 40, 1–72.
- Lampel, J. (2001). Show-and-tell: Product demonstrations and path creation of technological change. In R. Garud & P. Karnoe (Eds.), *Path dependence and creation* (pp. 303–327). Lawrence Erlbaum.
- Lipp, B., & Dickel, S. (2022). Interfacing the human/machine. *Distinktion: Journal of Social Theory*. Advance online publication. <https://doi.org/10.1080/1600910X.2021.2012709>
- Lynch, M. (2001). Ethnomethodology and the logic of practice. In T. R. Schatzki, K. D. Knorr Cetina, & E. von Savigny (Eds.), *The practice turn in contemporary theory* (pp. 131–148). Routledge.
- Lynch, M., Livingston, E., & Garfinkel, H. (1983). Temporal order in laboratory work. In K. Knorr Cetina & M. Mulkay (Eds.), *Science observed: Perspectives on the social study of science* (pp. 205–238). Sage.
- Mair, M., Brooker, P., Dutton, W., & Sormani, P. (2020) Just what are we doing when we’re describing AI? Harvey Sacks, the commentator machine, and the descriptive politics of the new artificial intelligence. *Qualitative Research*, 21(3), 341–359.
- Marres, N., & Stark, D. (2020). Put to the test: For a new sociology of testing. *British Journal of Sociology*, 71(3), 423–443.
- Masaki, T. (1997) *Le go cosmique*. Ed. Algo. (Original work published 1993)
- Maynard, D., & Heritage, J. (Eds.). (2022). *The ethnomethodology program: Legacies and prospects*. Oxford University Press.
- Mennick, J. (2016, April 1). Move 37: Artificial Intelligence, randomness, and creativity. *Mousse Magazine*. Retrieved August 14, 2021, from <http://moussemagazine.it/john-menick-ai-1-2016/>
- Merton, R. K. (1987). Three fragments from a sociologist’s notebooks: Establishing the phenomenon, specified ignorance, and strategic research materials. *Annual Review of Sociology*, 13, 1–28.
- Metz, C. (2016, March 16). In two moves, Lee Sedol and AlphaGo redefined the future. *Wired*. Retrieved August 14, 2021, from <https://www.wired.com/2016/03/two-moves-alphago-lee-sedol-redefined-future/>
- Mlynář, J., González-Martínez, E., & Lalanne, D. (2018). Situated organization of video-mediated interaction: A review of ethnomethodological and conversation analytic studies. *Interacting with Computers*, 30(2), 73–84.
- Mondada, L. (2009). Video recording practices and the reflexive constitution of the interactional order: Some systematic uses of the split-screen technique. *Human Studies*, 32, 67–99.

- Mondada, L. (2011). The management of knowledge discrepancies and of epistemic changes in institutional interactions. In T. Stivers, L. Mondada, & J. Steensig (Eds.), *The morality of knowledge in conversation* (pp. 27–57). Cambridge University Press.
- Natale, S. (2021). *Deceitful media: Artificial intelligence and social life after the turing test*. Oxford University Press.
- Natale, S., & Ballatore, A. (2020). Imagining the thinking machine: Technological myths and the rise of artificial intelligence. *Convergence: The International Journal of Research into New Media Technologies*, 26(1), 3–18.
- Perry, M., Juhlin, O., & Engstrom, A. (2014). Dealing with time, just in time: Sense-making and clip allocation in multiperson, multistream, live replay TV production. In M. Broth, E. Laurier, & L. Mondada (Eds.), *Studies of video practices: Video at work* (pp. 262–286). Routledge.
- Quére, L. (1998). The still-neglected situation? *Réseaux. The French journal of communication*, 6, 223–253.
- Redmond, M., & Garlock, C. (2020a). *AlphaGo to Zero. The Complete Games. Vol. 1: AlphaGo vs. Lee Sedol 9P*. Smart Go, Inc.
- Redmond, M., & Garlock, C. (2020b). AlphaGo to zero: Revisiting AlphaGo vs Lee Sedol, Game 2, with Michael Redmond 9p. *The Official AGA Youtube Channel* 17 May 2020. Retrieved May 26, 2022, from <https://www.youtube.com/watch?v=Cx24eXsX5xk>
- Rosental, C. (2021). *The demonstration society*. MIT Press.
- Ryghaug, M., & Skjølvold, T. M. (2021). *Pilot society and the energy transition: The co-shaping of innovation, participation and politics*. Palgrave MacMillan.
- Sacks, H. (1992). Technical competition. In G. Jefferson (Ed.), *Lectures on conversation* (Vol. II, pp. 348–354). Basil Blackwell.
- Sang-Hun, C. (2016, March 15). Google’s computer program beats Lee Se-dol in go tournament. *New York Times*. Retrieved August 12, 2021, from <https://www.nytimes.com/2016/03/16/world/asia/korea-alphago-vs-lee-sedol-go.html>
- Schegloff, E. A. (2007). *Sequence organization in interaction: A primer in conversation analysis*. Cambridge University Press.
- Schüttpelz, E. (2023). Reinventing the wheel of media theory. In C. Eisenmann, K. Englert, C. Schubert, & E. Voss (Eds.), *Varieties of cooperation: Mutually making the conditions of mutually making* (pp. 21–41). Springer.
- Sherman Heckler, W. (2011). Discovering work as ‘experimental demonstration’ in school science labs. *Ethnographic Studies*, 12, 12–30.
- Silvast, A., & Virtanen, M. J. (2021). On theory-methods packages in science and technology studies. *Science, Technology, & Human Values*, 48(1), 167–189.
- Silver, D., Huang, A., Maddison, C. J., Guez, A., Sifre, I., Van den Driessche, G., Schrittwieser, J., Antonoglou, I., Panneershelvam, V., Lanctot, M., Dieleman, S., Grewe, D., Nham, J., Kalchbrenner, N., Sutskever, I., Lillicrap, T., Leach, M., Kavukcuoglu, K., Graepel, T., & Hassabis, D. (2016). Mastering the game of Go with deep neural networks and tree search. *Nature*, 529, 484–489.
- Silver, D., Schrittwieser, J., Simonyan, K., Antonoglou, I., Huang, A., Guez, A., Hubert, T. H., Baker, L., Lai, M., Bolton, A., Chen, Y., Lillicrap, T., Hui, F., Sifre, L., Van den Driessche, G., Graepel, T., & Hassabis, D. (2017). Mastering the game of Go with without human knowledge. *Nature*, 550, 354–359.
- Simakova, E. (2010). RFID ‘Theatre of the proof’: Product launch and technology demonstration as corporate practices. *Social Studies of Science*, 40(4), 549–576.
- Smith, W. (2009). Theatre of use: A frame analysis of information technology demonstrations. *Social Studies of Science*, 39(3), 449–480.

- Smith, W. (2015). Technologies of stage magic: Simulation and dissimulation. *Social Studies of Science*, 45(3), 319–343.
- Sogoe, K. (1960). *Go proverbs illustrated*. The Nihon Ki-in /The Japan Go Association.
- Sormani, P. (2015). Fun in go: The timely delivery of a monkey jump and its lingering relevance to science studies. *Human Studies*, 38, 281–308.
- Sormani, P. (2016). Practice-based video analysis: A position statement. *Società Mutamento Politica*, 7, 103–120.
- Sormani, P., Alač, M., Bovet, A., & Greiffenhagen, C. (2017). Ethnomethodology, video analysis, and STS. In U. Felt, R. Fouché, C. A. Miller, & Smith-Doerr, L (Eds.), *The handbook of science and technology studies* (4th ed., 113–137). MIT Press.
- TED. (2022). *Technology, entertainment and design*. Retrieved March 10, 2022, from <https://www.ted.com/>
- Wieder, D. L. (1974). *Language and social reality*. De Gruyter Mouton.
- Zhou, Y. (2017). *The new territorial style*. CreateSpace Independent Publishing Platform.
- Ziewitz, M. (2016). Governing algorithms: Myth, mess, and methods. *Science, Technology & Human Values*, 41(1), 3–16.
- Ziewitz, M. (2017). A not quite random walk: Experimenting with the ethnomethods of the algorithm. *Big Data & Society*, 4(2), 1–13.

## Author biography

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## Appendix

### Transcription Conventions

(1s)	Pause timed in seconds
=	No discernible interval between adjacent utterances, or activities
(go ahead)	uncertain hearing or seeing
((does))	Described activity, typically non-verbal
<u>so</u>	Emphasized stretch of talk
>so<	Faster stretch of talk
°so°	Quieter stretch of talk
?	Rising intonation, as in a question
,	‘Continuing’ intonation
.	Falling intonation, as at the end of a sentence
[so	Overlapping utterances and/or activities
[this	
[((does))	
so	Utterance and activity overlapping, one sign per participant
((does))	
#I	Placement of video clip-based illustration