"EVERYONE FELT LIKE THEY OWNED IT": COLLABORATION AND EMPATHY IN VIDEO GAME ACTING

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Abstract

Performance capture (pecap) acting for videogames blends acting practices for traditional film, television, and theatre into a distinct form of screen performance. Veteran film actors must learn to adjust their creative cognitive work to accommodate the intensely collaborative industrial logistics of the pecap volume. This article analyzes pecap acting practices for videogames as examples of distributed cognition, wherein actors learn how to think with and through the volume's technological apparatus in order to collaborate with directors, animators, and more in the articulation of their characters. The article draws on interviews with AAA game pecap actors, game directors, animation directors, and acting instructors, and on observations from a pecap acting for videogames workshop at Toronto's MoCapU in October 2023.

Keywords: Performance capture; motion capture; video game; acting; distributed authorship; empathy; collaboration

Introduction

An underappreciated facet of a screen actor's professional skill set is her ability to acclimatize her creative work to the logistical specificities of the shooting location. One film or television studio is generally industrially similar enough to another; the actor does not concern herself with the sound stage's architecture as much as she does with situating her character within the mise-en-scene in front of the cameras. However, taking a broader notion of screen acting which includes performance-capture (henceforth, "pecap") acting for videogames complicates any such assumptions about the interchangeability of screen acting performance spaces, insofar as the actor's relationship with the physical venue.

After one of the authors attended a professional actor training workshop for pecap performance in videogames at Toronto's MoCapU in October 2023, it became abundantly clear that acting within the volume – the three-dimensional performance space rigged with dozens of small infrared cameras which record the markers on the actors' bodies (Delbridge, 2015, pp. 29–30) – should not be considered just another type of screen media production studio. The workshop's participants and instructors drew heavily from their extensive prior experiences in acting for film, television, and live theatre for their videogame scene studies. However, they also had to learn medium-specific practices for acting in the volume which blend acting practices from other media in unfamiliar ways. The prospect of a screen acting repertoire which blends and respecifies pre-existing screen and stage acting practices to acclimatize to a distinct performance-recording infrastructure prompts a re-examination of how actors work, create, and imagine amidst the logistical constraints and affordances of the pecap volume.

Although something of a blind spot in Film Studies, the actor's relationship to her performance space is well-trodden ground in Theatre Studies. John Lutterbie, for example, describes the theatrical actor's need to adjust the performance she crafted in the rehearsal hall to the spatial and auditory specificities of the performance venue so that creative choices which worked well in rehearsal are not "lost" on the generally larger stage (2011, pp. 216–217). Rick Kemp's analysis of British director David Jemmett's predilection for non-traditional theatrical performance venues presumes that Jemmett's actors can open themselves to the logistical and creative affordances of wherever they will treat as their stage for that production (Kemp, 2012, pp. 204–209). Evelyn Tribble provides an expansive framework for understanding the actor's collaboration with the performance space in her analysis of Shakespeare's Globe Theatre as a site of distributed cognition, wherein the total operations of the Globe – including Shakespeare's poetry, the venue's business model, the design of the stage, the rehearsal techniques, and the building's architecture – are essential and interwoven parts of a greater cognitive ecology (Tribble, 2011). Tribble treats acting as an instance of distributed cognition, wherein the actor's immersion within her performance venue is a complex layering and extension of the actor's imagination, attention, and creative energy into her social and material environments (Tribble, 2016, p. 134). Taken together, Lutterbie, Kemp, and Tribble position actors as individual creative agents whose work demands in part that they not only accommodate their surroundings while acting but also collaborate with those surroundings in order to make the performance as coherent and compelling as possible.

It is in this light that this article approaches the creative practices, tactics, and techniques of pecap acting for videogames: videogame acting in a pecap volume requires the actor to learn how to distribute the requirements of this new performance format into her bodymind repertoire, her creative cognitive work with the others on set, and into the volume itself. Video game production, theatrical production, and traditional filmmaking are all inherently collaborative practices in which creative professionals think and create together with and through their respective technological apparatuses. It should therefore be hardly surprising that the production processes for in-game cinematic sequences also rely on

collaborative and distributed senses of authorship (MacCabe, 2003; Pearlman, 2018; Pearlman & Sutton, 2021). It still makes sense to approach the collaborative bodymind work of pecap actors in videogames as a form of screen acting. That said, pecap acting for videogames' stylistic and logistical distinctiveness from traditional film and television acting stems from two major sources: first, the types of interpersonal and human-technology collaborations that it affords; second, from notions of actorly physicality, expressiveness, and training techniques which are more commonly associated with live theatre than with other forms of screen media.

Rather than propose a novel way to analyze performances in finished videogames, this article unpacks how pecap actors in videogame productions adapt their actorly empathetic solicitations (Leberg, 2022) to pecap's creative and industrial logistics. After a brief methodological explanation, we connect contemporary notions of collaborative and distributed authorship to the existing discourse of creative collaboration within videogame production, we examine the screen-actorly tactics for soliciting empathetic relationships within the pecap volume. In so doing, we consider how the technological, industrial, and creative affordances of pecap production shape the actor's individual work as well as the nature of her collaborations with other production personnel, especially the game- and animation directors. Ultimately, we argue that the volume affords a version of relatively-non-hierarchical professional collaboration and a retuning of the film and television actor's bodymind instrument that many of its longtime practitioners at Ubisoft Montreal view as being a distinct form of creative labour and embodied expression.

Our analysis is supported throughout by insights from the 2023 MoCapU workshop and the authors' subsequent semi-structured interviews with professional videogame actors, directors, and animators, all of whom regularly work with AAA game production studios like Ubisoft Montreal. The preliminary sample group for these interviews were the MoCapU workshop's participants and instructors, who kindly connected us with other professional pecap actors, game directors, and animators. Each interview took place over video call for about an hour and participants were compensated for their time. The interviews were recorded and transcribed for further analysis.

The questions on the interview guide were about the interviewees' personal history with pecap, "How did you get into pecap acting, especially for videogames?"; the practicalities onsite when filming, "What happens to acting technique when the actor has to account for all of the "invisible" props within the volume?"; and the differences of filming between mediums, "How does pecap for videogames feel similar to / different from acting in different media (film, theatre, voice, etc.)?". The interview guide was intentionally kept short to grant the opportunity to ask more questions or clarify as and when it was necessary. This gave interviewees space to share detailed responses (Clark et. al. 2021, p.426) about their expertise in pecap videogame production. After the first few interviews, collaboration appeared as a common topic so it became more of a focus in later interviews.

Collaboration in Video Game Production

Despite the regular compartmentalization of videogame studios into task-specific departments (Makovsky, 2023, para. 7) and the uneven power dynamics in how game-makers are credited for their work (Lassman, 2020), both the AAA and indie videogame production industries are fundamentally collaborative enterprises. The inclusion of pecap technologies within game production coincides with a general shift away from a culture of industrial compartmentalization and towards open collaboration and the sharing of ideas and expertise among game makers.

Casey O'Donnell's ethnographic study of game makers in American and Indian studios sheds light on the discursive shift from compartmentalization to collaboration within the organization of work within game development and

production. O'Donnell observes a tension between the compartmentalization of expertise within like-minded departments, such as engineering, design, marketing, etc, and the efficiencies of transparent interdepartmental production, collaboration, and communication practices (2014, p. 5). On one hand, many game makers choose to endure the corporate pressures to compartmentalize game production workflows, preserve inter-departmental secrecy, and to generally go without much public credit for their contributions to a given game because of the game makers' passion for their creative and technical work (2014, p. 12). On the other hand, many game developers benefit from learning across departmental lines, understanding "how games tick, how hardware functions, and how to leverage software systems to produce interesting and innovative creative works" (2014, p. 27). This openness to sharing ideas and skills showcases a tacit understanding of the value of collaborative work since game developers' roles include having to understand games from technical, artistic and marketing perspectives to design innovative games.

The value of collaborative production practices is particularly evident in the use of flexible game design software – coding systems that allow for game makers from multiple departments to work with the same incomplete game components simultaneously – within the production pipeline, even if the flows of power within the pipeline are rarely equal. O'Donnell points out that the efficiency of collaborative production platforms often depends on having individual software engineers who are open to regular and ongoing collaborations with artists and developers from different departments (2014, pp. 73–74). Since software engineers must first develop the game's digital assets and mechanisms before the art departments and gameplay developers can work collaboratively with them, the overall collaboration depends on the responsiveness of the engineers to the other departments' demands[1].

Recent developments in the technological infrastructure of game development are critical to understanding the importance of collaboration as a discourse within game production. Chris J. Young analyses how Unity, a versatile cross-platform game engine developed by Unity Technologies, has foundationally changed the technological infrastructure and the working culture of contemporary game development. Not only does the Unity platform facilitate nearly every aspect of game development, but the Unity Editor includes features designed to support convenient collaboration from game makers of all walks of life (Young, 2021, p. 148). Unity Collaborate is especially important for collective thinking as it allows "game makers to share builds of their games with collaborators or employees to avoid using other cloud-based systems for version control" (2021, p. 148). Unity Collaborate fosters collective thinking because, as an interdepartmental platform and game engine, it facilitates convenient feedback, communication, and testing for everyone in the production pipeline simultaneously. As a cognitive ecology of game production, Unity Collaborate represents a means to distribute each department's contributions to each other and to the game itself, thereby enshrining collaboration and the willingness to think together with and through the game-making technology within the very digital architecture of modern games.

Other game scholars have explored the importance of collective thinking within game production, although they rarely use these exact words. Mike Jungbluth advises game animators to communicate with other teams and know their expectations of animators to "clearly understand how all of these overlap or conflict with one another, as success can begin and end with how well these align" (2024, p. 2). Game animators examine the game's proposed story, design, and concept art, as well as the game's overall genre and tone, for prompts as to how their animation style can beneficially intersect with gameplay

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1   In a rough analogy to the film industry, the editing and post-production teams can only work with the footage that the director and cinematographic team shoot, which sets a collaborative premium on what and how much the directorial and cinematographic teams choose to shoot. In that hypothetical scenario, the directors may well choose to silo themselves from requests from the editing department about what footage to produce next.

features, assets, and actions which will be developed in part by other departments (2024, pp. 16–18). This illustrates the importance of collective thinking as animators should think alongside other teams and keep their goals in mind to make animations that work with narrative, gameplay and visuals, even if this does not officially fall under their role. Similarly, Rich Newman (2008) analyzes how creative directors and game producers not only collaborate to design the look and feel of a game but also to keep multiple production departments working together as a harmonious whole rather than as siloed and disjointed individuals. This cohesion requires a trust in the collective vision for the game at hand, as well as a tacit understanding that the production team's departments are willing to think together towards a common goal. For example, the producers' choice of game engine is predicated on their assumptions about what each production department, from engineering to cinematics, will need from each other to realize the intended gameplay mechanics, data usage, narrational possibilities through cut-scenes and events triggered by game play, and more (Newman, 2008, p. 39).

In this context, pecap actors entered the game industry as a welcome set of collaborators at the first negotiations between Ubisoft Montreal and ACTRA[2] in 2007. Despite the turbulent history between professional acting unions like ACTRA's American counterpart, SAG[3], and technician unions like IATSE[4] (Segrave 2009), the Ubisoft Montreal negotiators readily agreed that actors needed reasonable working conditions and equitable pay to optimally collaborate with the rest of the game development team (Carlo Mestroni, personal interview, March 19. 2024). The recognition that actors will be thinking along with the rest of the production team underscores the industry's emphasis on meaningful inter-departmental and technological collaboration, which is well reflected in the critical turn towards a collaborative understanding of screen media authorship.

Collaborative and Distributed Authorship

Colin MacCabe (2003) refutes film theory's long-standing idea of the director as the individual and singular creative genius whose artistry permeates the finished film (Wollen, 2008). Instead, film production is a fundamentally collaborative process in which the director is an important but not overdetermining force in shaping the final version of the film (MacCabe 2003). Even film directors like Orson Welles and Woody Allen who often write their own screenplays, perform in their own films, and are heavily involved throughout a film's production process, must still work with actors, technicians, and artists to see the film through to competition. Far from being the obtrusive "noise" (2008, p. 64) that Peter Wollen insists distracts critics from the singular director's work, the rest of the cast and crew meaningfully influence the final version of a film by using their best creative, artistic, and industrial judgments within their professional specialization to realize their part of the as-yet-unfinished film.

For MacCabe, these professional collaborations go far beyond industrial logistics and practicalities: the full production team's collaborative authorial efforts vicariously transform them into the as-yet-unfinished film's first audience (MacCabe, 2003, pp. 36–37). Not only is each member of the production team fulfilling their own part of the production process, but their necessary collaborations also prompt them to adapt their interpersonal contributions as they effectively watch the film being made, iteratively tinkering with the as-yet-unmade film in order to best realize the intended final product. In a video essay for Vanity

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2   Alliance of Canadian Cinema, Television and Radio Artists

3   Screen Actors Guild

4   International Alliance of Theatrical Stage Employees, Moving Picture Technicians, Artists and Allied Crafts of the United States, Its Territories and Canada

Fair, for example, *Saltburn* (2023) director Emereld Fennell vigorously credits the artistic contributions of her set decorators and costume designer, amongst others, for shaping the way she shot key scenes from the film (Vanity Fair, 2023)[5]. For Fennell, costume designer Sophie Canale's understanding of how a linen shirt holds sunlight, and the set decoration team's suggestions for how to punctuate the severe beauty of the interior set with the clutter of everyday life, were foundational to her ability to articulate the desired tone and feel of the sequence at hand. Far from positioning herself as the film's primary creative visionary, Fennell revels in the participatory contributions (Pearlman, 2024) of her fellow on-set co-authors.

Not only are the collaborative authors simultaneously creating and watching the as-yet-unmade film, but they are also using their industrial and creative tools to carry out that collaborative creating and watching. A film's make-up artist thinks through and with their cosmetics, sponges, and brushes in their collaboration with the head of wardrobe just as much as the director of photography thinks along with the director through camera lenses, lighting meters, and more. Karen Pearlman therefore proposes a model of distributed authorship in which the creative agency of each contributing author extends into the author's use of filmmaking tools as part of their creative cognitive ecosystem (2018, p. 308). Taking the creative processes of documentary film editors as her example, Pearlman argues that the editors' tactics for "watching, sorting, remembering, selecting and composing" documentary film footage rely on the editor being able to think through and with the footage and editing suite itself, and that this distribution of the editor's imagination into the filmmaking materials is of equal importance to her interpersonal collaborations with the director and other key production personnel (2018, p. 308). The goal here is neither to vindicate nor minimize the editor's creative contribution to a film. Rather, the hope here is to situate the creative bodymind

activity of filmmakers – like Pearlman's documentary editor and the pecap videogame actor – within the "ecology of practice" (Pearlman & Sutton, 2021, p. 92) in which that activity distributes itself throughout the production team, tools, and studio.

In considering pecap acting for videogames as a form of collaborative and distributed authorship, this article considers the pecap actor's creative bodymind practices as both a major contribution to the collective realization of the scripted character and as an embodied practice which extends into the cognitive ecology of the volume. We proceed by framing pecap acting practices as solicitations of screen-actorly empathy which adapt to the social, creative, and industrial logistics of volume, as opposed to the live theatre or the film and television studio.

Acting in the Volume

Jörg Sternagel, Deborah Levitt, and Dieter Mersch (2012) distinguish the "force" of acting from the "eloquence" of a finished performance: the audition, rehearsal, and exhibition processes of an actor's work all derive from the forceful energy of the actor's creative practices, all of which inform the eloquent articulation of the actor's character during the finished performance (p.53). Acting, in this sense, refers to the totality of the actor's creative practices, whereas performance refers only to the finalized version of the actor's work which is shared with an audience.

Dan Leberg broadly theorizes screen acting as a practice of soliciting three "simultaneous, overlapping, and complimentary" empathetic relationships (Leberg, 2022, p. 9). Although some styles of screen acting may privilege one connection as being the most important, it is the actor's attempt

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5   The authors would like to personally thank Karen Pearlman for introducing them to this insightful video, which Pearlman included in her keynote address at the 2nd Baltic NeuroCine Conference in Tallinn, Estonia, in April 2024.

to solicit all three[6] which creates western realist screen acting's verisimilar illusion.

The first type of empathetic connection that screen actors form is an Intrasubjective bond with their characters, which reorganizes their bodyminds so as to think, feel, and act as a situational character as opposed to the quotidian[7] actor. The actor targets the perceived intentionalities of her character, and then reorganizes her thinking, feeling, and actions to align with those of her character. The stereotypical notion of Strasbergian Method acting is heavily reliant on the Intrasubjective connection, presuming that actors who truly feel their character's emotions give superior performances because they have "become" their character. The second connection is the Intersubjective bond between actors, wherein performing actors co-enworld each other within the narrative by thinking together and iteratively responding to empathetic cues from each other's performances. In both of these empathetic connections, the actor is the observer who targets the bodymind intentionality of another self, be it the actor's character or another actor. In the Performative empathetic solicitation, however, the actor offers herself through her performance to the anticipated audience – represented on set by the camera – as a prospective target for the observing audience's attention and empathy. By acclimatizing her performance to the on-set affordances, the actor articulates her Intrasubjective and Intersubjective connections so that they are legible for the camera and, by extension, the film's eventual audience. In a way, the actor's Performative solicitation is the opposite side of the cognitivist approaches to spectatorial empathy in film-viewing: whether the long-take close-ups of Carl Plantinga's "scene of empathy" (Plantinga, 1999) or the multimodal foundations of embodied simulation when viewing faces and skin on screen (Gallese & Guerra,

2020, Chapter 5), actors are on the other side of those images making themselves seen.

The stylistic distinctiveness of pecap acting for videogames depends largely on how this Performative process of making oneself seen within the volume reconfigures the actor's articulations of her Intrasubjective and Intersubjective connections. As our interviews and workshop observations showed, the Performative solicitations of pecap acting for videogames require a surprising blend of acting practices commonly associated with live theatre and traditional film and television. Even if this return to theatrical acting is rarely acknowledged as such, the semblances of theatrical acting identified in our analysis are considered normalized parts of pecap acting by their practitioners. One of the major consequences of this subtle return to theatrical practices is the how the working conditions of some styles of theatrical rehearsal intersect with the collaborative dynamics of videogame production, resulting in an on-set culture that is considered less rigidly hierarchical than that of most film and television sets. This section proceeds by unpacking the industrial constraints and affordances of the volume on traditional film- and television-based Intrasubjective solicitations, and then examining how the collaborative on-set dynamics shape the ensuing Intersubjective and Performative solicitations, all the while fostering a more egalitarian screen production culture than might otherwise be expected.

Intrasubjective Acting in the Volume

Once hired for a role in a videogame, the pecap actor's preliminary tactics for connecting with and embodying her character are, in many ways, nearly identical to those she might use for a traditional film and television role. For pecap actor and MoCapU founder Ivan Sherry, pecap acting is firmly grounded

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6   For a detailed explanation of Leberg's three empathetic solicitations, see Chapter 3, "The Actor's Three Empathetic Solicitations", in *Screen Acting: A Cognitive Approach* (2022).

7   "Quotidian" here refers to the actor's everyday self when she is out of character and not acting. The quotidian Marlon Brando, for example, could become the situational Stanley Kowalsky if he started acting as Stanley in rehearsal or in performance, but the quotidian Brando likely returned once that rehearsal or performance ended.

in traditional notions of "great acting" in that the actor must embody her character and advance her portions of the narrative in a compelling way (personal interview, February 23, 2024). As in film, television, and theatre, the pecap actor will still be expected to arrive on set with her physical, emotional, and textual preparations ready to perform the day's scheduled scenes. She must study the script for clues towards her character's cognitive scaffolding (Feagin, 2011) while she learns her lines, and draw on whatever imaginative and physical preparations that she deems appropriate to reorganize her bodymind as that situational scripted character.

Although the cognitive ecology of the volume does not necessarily change the actor's physical and imaginary preparations for connecting with her character, the volume complicates the actor's expression of the emotional interiority associated with the Intrasubjective connection. Moreover, the Performative solicitations which are best afforded by the volume's technological infrastructure tend to disarm the film and television actor's most reliable tools for communicating her character's intentionality; the interiority stays the same, but it manifests itself differently for the pecap actor to be recognizable as her character. Two of the most disorienting technical hurdles that a pecap actor who is accustomed to traditional film and television acting must face are: her understanding of where her framing and audience are; and, the erasure of her eyes from her performance.

Actors in live theatre know where the audience is seated so that they can make sure that their performance is legible at the appropriate scale and remains aimed in the audience's general direction. Similarly, film and television actors generally know the shot scale in which they will be filmed so that they can adjust their performances accordingly: an actor framed within a long shot has considerably more freedom of physical movement than an actor framed in a close-up. The pecap volume, however, records the markers on the actor's body from all angles simultaneously, and all choices about an in-game cinematic sequence's camera angles, heights, movements,

and framings happen in post-production. An actor trained for film and television finds herself without the traditional two-dimensional rectangular camera frame towards which she orients her performance, and must instead articulate her character's interiority within the volume's "omniscient" and "spherical" frame (Delbridge, 2015, pp. 43-45). In theatrical terms, this is like performing a spherical theatre-in-the-round production in which the audience may well be above the actors' heads, but the actor has no idea where the sole audience member is sitting. Although actors can infer from a scene's narrative context how close the eventual framing may be – in-game cinematics with emotionally intimate moments will likely include smaller shot scales than a grand clash between enormous fantastical armies – actors must still presume that any final framing is possible.
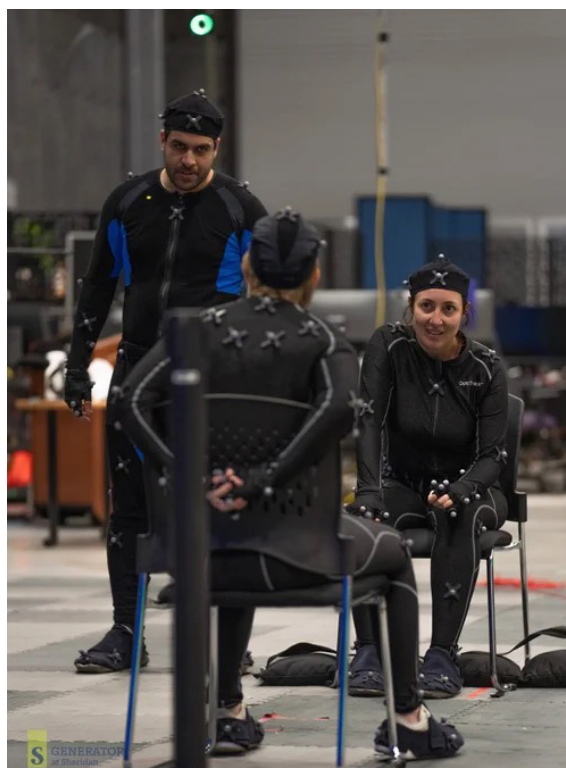

Fig. 1 Alex Somerville and Amy O'Grady in rehearsal, by MoCapU. 2019-2020. www.mocapu.ca.

This openness of perspective does not, however, give the actor freedom to articulate her character however she likes. Veteran pecap actors Carlo Mestroni and Ivan Sherry both describe pecap acting as being somewhat larger in physical scale than traditional film acting but also somewhat smaller in scale than live theatrical acting (Ivan Sherry, personal interview, February 23, 2024; Carlo Mestroni, personal interview, March 19, 2024). For Ivan Sherry,

Pecap is cinematic, [but] it also has a balance of film and TV and theatre, and you're riding that balance all the time, shifting your performance based on your collaboration with your director. (personal interview, February 23, 2024)

Carlo Mestroni explains that videogames' often-fantastical and violent narratives requires actors to commit to the narrative, despite a more exaggerated performance style than befits a film of the same genre:

[Your character is] often in an extreme situation, so you have to be able to convince yourself and convince the viewer that you are 100% in this world and that those stakes are there. Once those stakes are there, you can actually break through all the layers of animation that are going to go over your performance. You have to make sure that that performance is clear enough, that it's not going to be lost underneath those layers of animation. (personal interview, March 19, 2024)

Consequently, pecap actors adapt their expression of their character's emotions to an awkward middle-ground scale which is generally undesirable in most film, television, and theatrical productions.

The physical awkwardness of indeterminate scale, framing, and perspective is compounded by the fact that pecap videogame productions typically do not record eye movements, thereby robbing film- and television-based actors of the power of eye-dependent facial expressions of emotional interiority. Although some game production studios attach smaller trackers to the actors' faces to record some movement of major facial muscles, the final version of a character's minute facial expressions is often more reliant on the animators than the actors themselves. This can pose a frustrating challenge to film- and television-based actors performing emotionally intimate in-game cinematic sequences. Game director Grant Harvey recalls a moment while shooting the cinematics for *Watch Dogs: Legion* (Ubisoft Montreal, 2020) when an actor gave an "emotionally stunning" performance of an intimate character moment which was largely unusable by the animators (personal interview, March 11, 2024). The actor had played the scene as if she was in a tight close-up shot for a film and had communicated most of her rich emotional interiority through her eyes. Unfortunately, there were not enough trackers on her head and face to record her expressive eyes in relevant detail, so much of the performance was lost. Harvey's anecdote underscores the need for pecap actors to adjust their performances to the production studio; to relearn how to think along with and through the technology, just as theatrical actors once had to do at the invention of motion picture cameras, or how silent film actors had to learn how to work with and through their microphones (Bode, 2017, p. 35).

The new physical vocabulary that actors learn to externalize their Intrasubjective connection with their character demonstrates the cognitive ecology of the volume prompting an adjustment to the actor's technique in order to better think along within the volume. To that end, two of the foundational technical conventions of pecap acting, called the "idle pose" and the "neutral walk" help actors to acclimatize to the volume so that they can begin to coherently externalize their Intrasubjective connections. The idle pose is somewhat self-contradictory in that it requires the actor to stand still while still moving and breathing naturally. Although actors in traditional film, television, and theatre can "lock" their bodies and stand perfectly still without disrupting the verisimilar illusion, an utterly motionless character in a videogame gives

the impression that the game is somehow malfunctioning (Grant Harvey, personal interview, March 11, 2024). The idle pose should contain a physical vocabulary of minute movements which are associated with the character. Animators will use the actor's idle pose footage at any moment in the game in which the character is present on screen but is not performing any intentional actions. Moreover, any movement of the head or limbs should be as non-descript as possible since animators will likely loop a few seconds of each character's idle pose for moments when the character is relatively still so as to not create undesirable narrative connotations: as Ivan Sherry explains, "if your character scratches their butt every 8 seconds, they probably need to see a doctor" (personal interview, February 23, 2024).

Like the idle pose, the neutral walk exercise challenges the actor to embody as their character without an explicit narrative motivation. The actor creates a volume-lucid and lo-opable walk which animators will use throughout the game. In so doing, the actor develops a physical vocabulary for her character which is primed for the animators' collaborative contributions later in the game-making process. With striking similarity to neutral mask training in some physical theatre traditions (Henderson & Tilley, 2020; Eldredge & Huston, 1978), pecap actors are reminded that no pose is ever entirely idle nor is any walk ever entirely neutral: the inherent expressiveness of human action is quickly ascribed to some form of personal, emotional, or physical state. This is not to suggest that standing still or walking without intentionality are profound and detailed expressions of the actor's emotional connection with her character. Whereas film acting technique tends to emphasize the actor's orientation within the frame (Britten 2014), these techniques essentially adapt the attentiveness to physicality that theatrical neutral mask work trains to a screen acting tradition which, in this sense, is quite different from traditional film and television acting. The idle pose and neutral walk exercises are geared at how to best align one's "good acting" principles within the cognitive ecology of the volume.

Pecap actors who master the idle pose and neutral walk give themselves a foundational template upon which to start layering character details specific to later narrative situations within the specific collaborative affordances of the volume's technology. In adapting and extending their acting techniques into the cognitive ecology of the volume, the actor opens their performance to co-collaborators in front of and behind the cameras; as the upcoming sections show, the pecap actor is not the sole creator of her character's performance.

Intersubjective Acting in the Volume

Given the kinds of Intrasubjective challenges described above which actors who are new to pecap must face, many veteran pecap actors suggest that newcomers ignore the technological apparatus as best possible and instead focus on their collaborations with the other actors. This way, the actors can co-enworld each other by thinking along together towards their shared narrative goals, confident in the expectation that their co-collaborators, whether the director or the animators, will let them know if aspects of their performances are not being optimally recorded.

The cognitive load of this co-enworlding process should not be underestimated: pecap acting relies on a tremendous amount of imaginary work to imbue the generally barren mise-en-scene with evocative mental images to help them ground their performance in the space. Most pecap volumes for videogames offer practically nothing in terms of traditional mise-en-scene or realistic props. The boundaries of the scene's playing area, such as the walls of a room, are likely demarcated by tape lines on the floor rather than by actual physical barriers. A set often consists of rudimentary tables and chairs under unremarkable fluorescent lighting. Those tables and chairs likely do not have markers on them so they will not be filmed by the volume. Moreover, the design of those on-set tables and chairs are important only insofar as they afford various sitting and standing actions by the actors.

Since the tables and chairs in the actual game will be entirely designed by the animators, it is up to the actors to imaginatively project the context of the actual game onto those set pieces, whether they are in the banquet hall of a fantastical emperor, the underground hideout of an urban crime boss, an escape shuttlepod from a destroyed spaceship, etc.

The actors likely wear no meaningful costumes or make-up, beyond what productively informs the actor's movement (Mike Hollenbeck, personal interview, April 12, 2024). A pecap actor playing a wealthy modern woman who attends the opera, for example, might wear high heels to give the "digital skeleton" (Carnicke, 2012) of her makers the gait of a woman in formal evening wear, but the final design of the character's shoes and gown would be left to the animators and art departments. Otherwise, pecap actors wear generic lycra suits designed primarily to keep their markers in place. In this sense, the cognitive ecology of the pecap volume structurally anticipates that actors will use the versatility of the open space to imaginatively create what they need to enworld themselves, but must primarily rely on themselves and each other rather than the pre-designed and present givens of a traditional film set's mise-en-scene.

The volume's sparse mise-en-scene therefore bares a much closer resemblance to a versatile rehearsal studio for a theatrical production than a set-decorated film or television studio. Theatrical productions often rehearse with substitute costumes and set pieces, arranged within tape marks on the studio floor which map the size of the final performance venue. They rarely have access to the complete mise-en-scene until the final onstage phase of rehearsals before the arrival of the first audiences. The rehearsal time for most film and television productions is often considerably shorter than those of live performances, so the vast majority of most film and television actors' preparation time takes place on a completed set while filming. Even in heavily green-screened film productions with actors in pecap suits, the use of conventional cameras means that the rest of the mise-en-scene is decorated

to completion. In contrast, pecap shoots for videogames use conventional cameras to provide valuable reference records of the actors' performances for the animators, but this footage is never included in the finished game. The completely animated world of the videogame simply does not require conventional footage of the actors in costumes or on a decorated set. Instead, pecap sets only require set pieces, props, and costumes that inform how and where the actors can move; as in theatre, the final mise-en-scene is added later.

Therefore, any means for actors to aid each other in projecting the game's mise-en-scene onto the volume's minimalist set by focusing on each other is considered valuable. The collaborative dynamics of actors explicitly focusing on each other to realize the narrative world are best described as a form of immersive imaginary play. In fact, the parallels between the focus with which pecap actors attend to each other within the script's narrative circumstances to imaginarily flesh out the mise-en-scene and how schoolyard children create imaginative scripts for playing on playground equipment are striking. When one of the authors' son and his classmates pretend, for example, that the ground beneath the jungle gym is made of molten lava, they each adjust their movements and actions around the perceived affordance of not being able to touch the ground, even when the narrative of their game encourages them to find clever ways to descend the jungle gym. In a sense, within the script of the "the ground is lava" game and the cognitive ecology of the jungle gym, the children perpetuate the game by keeping each other within the imaginary rules; the game only ends when the players stop playing together, thereby stripping the jungle gym and the ground beneath it of their imaginary qualities. Similarly, in the cognitive ecology of the pecap volume, the actors co-enworld each other within the narrative by iteratively responding to the imagined environmental circumstances together. For many screen actors, treating non-descript and non-diegetic objects as part of the scene – to use, for example, an off-camera tennis ball on a stick as a stand-in for another character to establish an eyeline (Leberg, 2022, pp. 162–166) – is a common industrial

practice. As Grant Harvey describes, "You're using your imagination for everything. That's how it is. It's very playful that way and I think the cast enjoy that" (personal interview, March 11, 2024). Collectively reimagining the spartan volume set as a fully-dressed mise-en-scene is essentially an extensive and focus-consuming application of this same skill set of imaginary substitutions. This comparison to schoolyard imagination games is not intended to belittle the creative collaborative practices of pecap actors; rather, Harvey's "playful" spirit exemplifies how actors acclimatize themselves within the pecap volume's cognitive ecology.

The spontaneous and often-unanticipated performance moments created when pecap actors play together like this to perform a scene are often considered quite valuable by game directors and animators alike. Although videogame cinematics are generally storyboarded before they are filmed, the exact blocking of a pecap scene is rarely fixed until the actors and director can experiment together within the volume:

> Our [Assistant Director] always left us time [to experiment], which is something I never get to do in film. [Therefore,] it was less about me telling everyone 'this is what we're doing' and more about discovering it together. We would work it out together with the narrative director, with the animation directors, with the cast. Everyone felt like they owned it. (Grant Harvey, personal interview, March 11, 2024)

While actors cannot add or alter designs for animated props and set pieces, the lack of physical set pieces, costumes, make-up, or traditional filmmaking's concerns about lighting, camera movements, mise-en-scene continuity, etc gives actors and directors considerable logistical freedom to stage the scene as they collectively see fit, which very much differs from filmmaking. Moreover, if they are not wearing any markers, the director is free to walk around within the volume while the marker-clad actors are being recorded, thereby allowing the director to actively shape a scene while it is being

performed without intruding within the shot, letting him closer to the cast: "I felt like I was in there with the cast, and and I could trust the narrative director and the animation directors to keep an eye on us back at the monitors" (Grant Harvey, personal interview, March 11, 2024). The volume's cognitive ecology therefore affords for vibrantly different forms of on-set collaboration than traditional film and television production.

Although videogame cinematics are often scripted and loosely storyboarded, the open embrace of actorly improvisation regarding how the scene will be performed resembles the refinement of devised theatre creations into the "performance script" for repeatable performances. Broadly speaking, devised theatre is co-created by teams of artists who invent the premise and script for their performances through intensive, iterative, and collective experimentation, rather than necessarily beginning their work with a pre-completed script (Henderson & Tilley, 2020; Eldredge & Huston, 1978). Rick Kemp suggests that devised and scripted theatre should be seen not as binary opposites but as different ends of a continuous spectrum of co-creative artistic practices, thereby encompassing a wide range of modern theatrical production strategies for imagining the fixedness and malleability of the agreed-upon performance script, whether the creative process began with scripted words or not (Kemp 2019, p.49). Whereas most traditional film and television production practices are organized around the
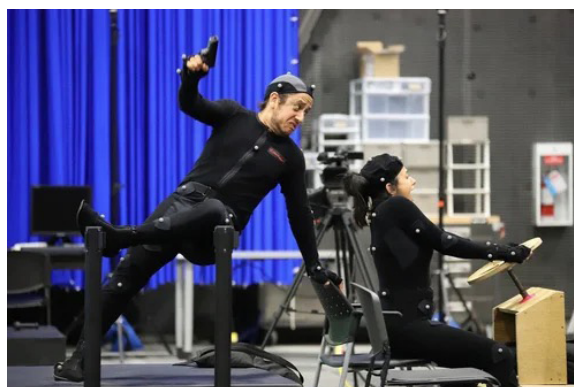
Fig. 2 Kris Siddiqi and Ana Sani, in rehearsal. MoCapU. 2019-2020. www.mocapu.ca

realization of the director's vision, the affordances for distributed cognition within the pecap volume encourage a high level of relatively egalitarian collaboration among actors, animators, technicians, and the director feels more at home on the devised end of Kemp's spectrum.

All of this study's interviewees recalled moments within the volume where the co-creative collaboration in staging, performance, and animating a scene depended on a comparatively even-handed balance of social power on set which, as Grant Harvey insists, "would *never* happen on a film or television set" (personal interview, March 26, 2024). In one of the most vivid examples, Carlo Mestroni recalled a moment when an on-set technician in an Ubisoft Montreal volume called "cut!" during a recorded take to propose a technical adjustment to how the scene was staged. Whereas this usurpation of the director's authority on a film set would have led to the same technician being immediately reprimanded or fired, the attitude in the volume was to amicably consider the technician's suggestion: "You feel that everybody's on the same level. Certain people have specific jobs, and they need to get things done, and everyone knows what everybody's role is, but there's a different type of respect here" (personal interview, March 19, 2025). Video game actors can therefore embrace the devised theatre parallels within pecap volumes to be spontaneous, to support and co-enworld each other, and to actively share the creative workload with their off-screen collaborators. As such, the types of acting practices required to physicalize the Intrasubjective connection and imaginatively commit to the Intersubjective connection aspire to a form of Performative solicitation aimed at one of the actor's chief co-collaborators and first audiences: the animators.

Performative Solicitations to the Animators

A game's director of animation is always present at the volume while pecap performances are being recorded and, like the director, is generally free to interact with the actors. This freedom of interaction is important to the volume's cognitive ecology for two related reasons. First, the animation director is very much among the performance's first audience: animation directors like Mike Hollenbeck of Ubisoft Montreal monitor not only the technical stability of the volume's recording but also the creative and narrative potential of the digital skeleton recordings. Like the collaborative authors of MacCabe's film set (2003), the animation director contributes to the game's completion by iteratively guiding the production elements within his control and expertise towards their best and feasible final state. What is particularly interesting about Hollenbeck's approach is his vehement emphasis on "restoring" the digital skeleton to what the actor's "holistic" performance in the volume, rather than "correcting" or "destroying" the actor's work:

> You are basically trying to restore and heal this data, and you're not trying to destroy it in any way. You're not trying to take [the actor] away. Your technique is to always build [animated] layers on top of the data you got. So you're always adding and repairing on top of the base data; you're trying to never take away from the base data from the actor. (Mike Hollenbeck, personal interview, April 12, 2024)

The agency which animators share with the actor in creating the synthespian character's performance is less about possessiveness and more about craftsmanship. Animators commonly arrange for a traditional camera beside the volume in order to preserve the facial expressions that actors made with their eyes so that the animators can attempt to recreate the compelling details of such a performance, even if that traditional camera footage is never included in the finished game (Mike Hollenbeck, personal interview, April 12, 2024). The actor and animator's shared investment in puppeteering the character together requires them to think within and through the cognitive ecology of the volume, distributing the creative agency beyond any clear single author.

Rather than prescribing character actions in minute detail to ensure continuity, animators have learned to trust performance choices by actors as reliable pathways to compellingly realistic performances (Ivan Sherry, personal interview, February 23, 2024). Ivan Sherry views this trust in actors as a permission structure to do his best acting work:

> When we allow ourselves to really play, that's when our work is freest. And it's generally when our work is freest that we're most actively listening and we're most actively reacting to our scene partner. The work just comes alive in a way that's different than when we have those pressures on ourselves to 'do it right'. (personal interview, February 23, 2024)

This is not to suggest that the work is any less strenuous than that of film and television; the imaginative work required by the actors to visualize the entire mise-en-scene is exhausting, to say nothing of the athletic demands of pecap stunt and action sequences (Carlo Mestroni, personal interview, March 19, 2024). Rather, the general lack of pretense and egoism stems from the openness of the actors, director, and animators to supporting each other's best work.

Second, the distribution of the actor's performance into the volume for future use by the animators positions the animators as a direct co-creator in the articulation of the character. For this co-creation to work, the actor performs as much for the animator's benefit as at the director's behest. Although pecap performances are easily appropriated for character actions during gameplay sequences, none of the actors interviewed for this study – even when explicitly asked – mentioned that they consider the player's experience of their character during gameplay, nor do they see their task as actors to create, shape, or form the gameplay mechanics. Instead, the Performative solicitation in pecap acting for videogames offers the actor's performance to the animators, rather than the players, as part of the collaborative project of creating their character's performance together. If the animators are to "heal" and "restore" the recorded actor's digital skeleton to her holistic performance in the volume by draping layers of digital animation across it, the animators must be able to read and ascribe enough intentionality to the digital skeleton's movements to collaborate on the performance by fleshing it out with digital skin.Whether or not the animator fully empathizes with a character is less important than their ability to accept the actor's offering of a Performative connection as an invitation to co-author her soon-to-be finished performance.

Lisa Bode productively casts the pecap actor as the simultaneous "marionette" and the "puppeteer" of her synthespian character as a means of framing the actor's visibility of the actor's craft in its creation (2017, p. 40). As much as the pecap actor's performance informs the animation strategy for the digital skeleton that it produces, the digital skeleton is rendered within the volume's ecology of practice to be manipulated by others. Following Bode, it is possible to imagine the animator as both the puppeteer and the puppet-maker: animators assert control over the character's performance with the ability to reshape the performance materials – the digital skeletons – and the ensuing layers of draped animation (Leberg, 2020) as they see fit. The overlapping puppeteer status of both the actor and the animator gives both mediamakers a sense of creative agency over the characters which their collaboration creates within the volume's cognitive ecology.

Conclusion

By distributing their collective imaginations into the volume, pecap actors contribute to an ecology of practice centered on play while also re-writing the technical and creative rules for how screen acting can work. The recurring presence of creative and industrial conditions in screen media which bear a closer resemblance to those of live theatre than might be expected is not entirely without precedent. Screen acting's history is, among many other things, a story of actors who formerly trained for and specialized in a pre-existing medium

who adapted to changes in motion pictures' technological apparatus. Many of the first professional performers to appear in early silent cinema were theatre actors, acrobats, dancers, vaudevillians, circus performers, and more. Decades later, the transformations in film acting technique across the silent and sound-on-film eras – a moment in film history when theatre actors with trained voices rapidly transitioned into the film industry – once again forced actors to adapt their creative practices to take advantage of the new technology's opportunities. Although it is impossible to completely avoid a technologically determinist reading of how technological developments shape screen acting technique, the hope of this article has been to examine how actors continue to expand screen acting's repertoire through embodied, imaginative, empathetic, and creative work. Essentially, the distinctiveness of pecap acting for videogames is contingent on its blending of film, television, and theatrical acting practices and working conditions. Even as screen acting repertoire expands to include pecap acting for videogames, the underlying principles of what Ivan Sherry calls "great acting" – the connection with one's character, the chemistry between performing actors, and the invitation to the audience to feel and imagine along – still frame the ways in which pecap actors do their work. If the common denominator of western realist acting practices is still the actor's ability to reorganize her bodymind as a self distinct form her quotidian one, then pecap acting significantly emphasises the collaborative and participatory agency within screen acting. Pearlman's (2024) insistence on collective participatory authorship replacing mainstream director-centric notions of authorship rings quite true for the videogame industry and the agency of the pecap actors within its volumes.

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