Analyzing the Analyst: An Experimental Data Video for Thinking Theatre and Cognitive Neuroscience Together

Yelena Gluzman

Before I say much else about *Analyzing the Analyst*, the video to which this text is an accompaniment, I should say that, if you are like me, this might be the sort of video you'd prefer to watch without too much framing beforehand. And though I wouldn't want to prescribe how to engage with this material, I would like to assure you that, yes, it's ok to stop reading now, watch the video, and come back whenever you're ready.

While you were gone and I was struggling to write the next paragraph, I realized that my opening gesture above, to privilege the video over the text, is itself indicative of my project in making this video. Rather than using the video as "supplementary material"[1] to illustrate an argument that has already been worked out through its writing, here the video—both in terms of the process of me making it and that of you watching it—is meant to be, itself, *an empirical opportunity for analysis and interpretation*. I will say more about this below, but given its dense convolutions, let me start with some questions you might have asked yourself as you watched the video.

What Is This?

Analyzing the Analyst presents video material from three different but interrelated situations: (1) an interaction between strangers in a participatory audio piece ("*your position*") installed in an art gallery, (2) an interaction between myself and a cognitive neuroscientist as we attempt to analyze video recordings of the interactions in the art gallery, and (3) a rehearsal in which I describe the two previous scenes to a group of three performers, with whom I then work to re-perform my interaction with the cognitive neuroscientist. The video does not constitute the entire project dealing with this material; rather, it is meant to present the *materials and methods* of the larger project, in advance of identifying and discussing its findings.

The larger project is an attempt to consider claims about embodiment from theatre and performance studies with those made in cognitive neuroscience and seeks to develop an experimental paradigm to examine these notions in practice. *Embodiment theory* suggests that social, political, emotional, and cognitive processes cannot be separated from the ways that they form through, and are maintained by, bodily action. For cognitive neuroscience, embodiment theory was proposed in the early 1990s as a challenge to older "brain-in-a-vat" cognitivist paradigms that considered cognition to be located in the brain, separable, in principle, from the body and environment in which that brain was embedded (Varela et al. 1992). For theatre, the ways in which social and cognitive phenomena are inscribed on bodies and propagated through bodily interaction have long been central to scholarly work and artistic practice. Parallel to the turn to embodiment by some cognitive scientists was an uptake of the term in theatre studies (Spatz 2015), and an attempt, by some theatre and performance scholars, to relate these two concerns (Blair and Cook 2016; Falletti et al. 2016).

Yelena Gluzman is a theatre director and researcher. She is a PhD candidate in Communication, Science Studies and Interdisciplinary Cognitive Science at the University of California, San Diego.

Previous research applying cognitive neuroscientific views on embodiment to theatre practices has been able to make important claims; for example, that a seemingly passive spectator is, through what some scientists have called the "action understanding" function of mirror neurons, in fact actively (though not consciously) incorporating observed movement onto their own seemingly non-moving bodies (Cook 2007, 590). However, this work can be problematic when applying such concepts without engaging sufficiently with the complexity of scientific findings and ways those concepts have been produced (Cook 2007, 591n5). One way to address this omission would be through an ethnographic laboratory study looking at daily practices in a cognitive neuroscience lab that engaged with the embodiment problem, a method typical to laboratory studies in Science and Technology Studies (Latour and Woolgar [1979] 1985; Knorr Cetina 1981; Lynch 1985). This sort of ethnography, however, for me, is problematic in respect to the rigid—and at times oppositional[2]—relation between the ethnographer and her field site. It is also problematic in its imperative to lay bare the performativity of scientists' practice while struggling to account for the performativity of one's own ethnographic practices (Gluzman 2017).

My approach here explores an alternate configuration for multidisciplinarity between theatre and cognitive neuroscientific practice, in which experimental situations create a shared space of inquiry without necessarily seeking consensus. Experiments are performative in a particular and orchestrated way; they are sites of interaction whose staging shapes the sorts of phenomena that become visible. While experiments are central to the way that cognitive neuroscientists approach the empirical, they are also central to a range of artistic and theatrical practices that interrogate the embodied, empirical conditions of their production and reception. In the project presented here, theatre-based experimental interventions in the cognitive science lab function as sites where divergent investigative approaches can become visible, actionable, manipulable, and theoretically viable to each other.

Why a Video?

Within this larger project, the video *Analyzing the Analyst* takes up the problem of how to make available the empirical phenomena that arose in these experiments and is thus meant to function as an *experimental data video*. It is a *data video* in the sense that all the material in the video—even the authorial voice-overs—come from empirical interactions that arose in one of the video's three contexts, each of which was recorded to allow analysis and interpretation after the fact. Though all the interactions occurred within my heavily choreographed conditions (or experiments), none of them were scripted for the camera. Not only do I consider and treat these interactions as data, available for analysis, but also consider that their medium as *video* data could allow a viewer to encounter these rich empirical interactions without relying primarily on textual descriptions. While I do not wish to reinscribe simplistic divisions between video and text, my hope is that the video itself (as well as this accompanying text) offers an opportunity to engage more nuanced aspects of the data.

The video is considered to be *experimental* in two senses. First, the project of making the video (selecting particular video clips, combining, splicing, and editing them together to make a coherent work) was treated as a medium-dependent experimental process, in which my first attempt to think all three layers of this material together was done by manipulating and juxtaposing the video itself, not through linguistic reflection on watching the video data. This required reflexively attending to and dealing with the complex ways in which the three layers of material speak to each other, and how such juxtapositions could speak to a viewer. The long process of editing, thus, was itself a

reflexive process of analysis that attended to the particular concerns and difficulties that arose specifically *in video* when trying to jump from one level to another while preserving important contextual framing that gives sense to any of the layers. Therefore, the experimental orientation of this process necessitates thinking, through *doing*, about the affordances and demands of video as data.[3] This process of thinking through video did not resolve but rather made available the tension between an irreducible situated event and a generalizable grammar of meaning-making in interaction.

The video is *experimental*, also, in the sense that it is made to orient viewers not only to the interpretive acts being done by all the "analysts" shown on video, but also to their own interpretive practices as they watch the video. In this sense, the "Analyst" in the title is meant to be a floating signifier, and to include, potentially, the video's viewer. By foregrounding not just the *fact* but also the *experience* of interpretation, the video opens up an interrogative[4] dynamic in which a viewer can ask questions of their own flow of attention and interpretation, even while the video asks viewers to attend to others' interpretive action.

The three different situations shown in *Analyzing the Analyst*—the interaction in the gallery, the interaction in the lab, and the interactions in the rehearsal room—are each meant to provide empirical materials to think about the others, and to focus our attention on the resources and strategies taken up in each interpretive process. Though I am interested in how these sites differ, I do not consider their juxtaposition to be a comparative project which, as I understand it, would necessitate an external position for the analyst. Rather than defining or explaining the differences between layers, I am more interested in their porousness: how does each reflect and refract the others?[5] If this project is using logics of comparison, they are rather in the mode of a "practicing comparison"[6] that doesn't rely on fixed, pre-defined differences between each situation (i.e., "controls"), but rather sets up a dynamic field of interrelations that must be navigated from *within* the moving field.

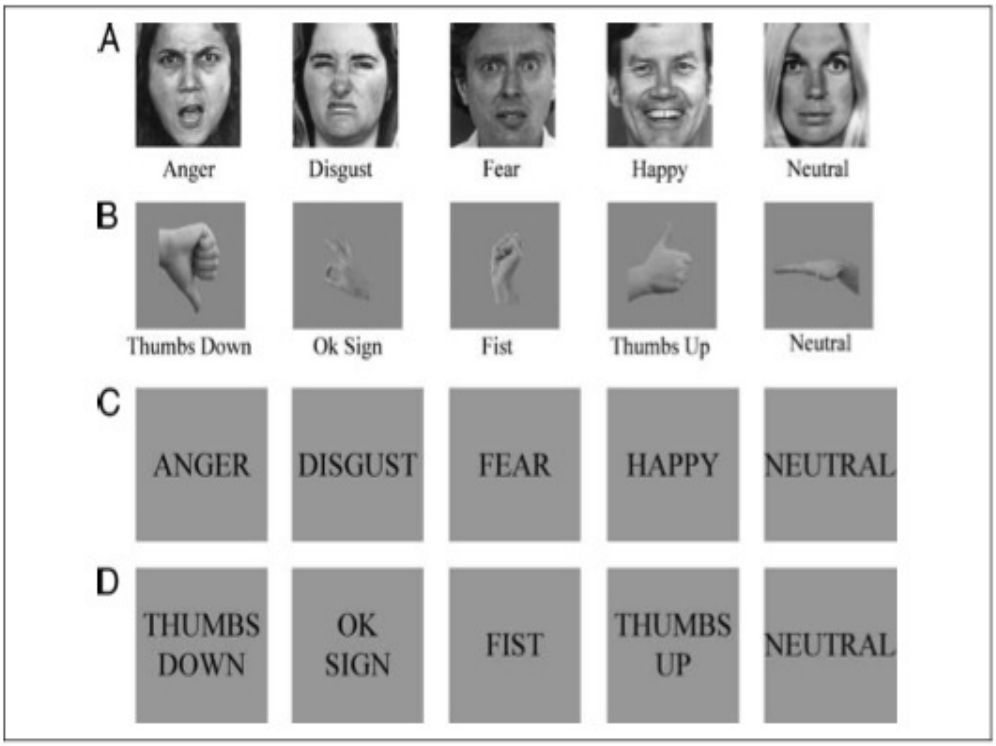
Who Are These People? What Do They Think They're Doing?

1. "Unfolding interaction in *your position*"

The interaction in the gallery occurred in the context of *your position*, a participatory audio installation made by Jen Hofer and myself. Jen and I had made the first version of this piece for a literary performance event in Los Angeles called *Enter>text*;[7] here, because the event involved ongoing, simultaneous performance events and an audience that roamed among these, we decided to use audio and headphones to allow for an intimate experience among the bustling activity of the larger event. We conceived of the audio dialogue as a way to catalyze a shared encounter among the pairs of strangers we invited to do the piece, and the dialogue always referenced the specific space in which *your position* was presented, facilitating a connection between the unfolding interaction between participants and the recorded dialogue. Thus, Jen and I revised and re-recorded[8] the text of the dialogue for each presentation of this work.

Gallery-goers were not instructed to interact with each other or to take on the roles of the speakers they heard on headphones. As my voice-over explains to the actors in *Analyzing the Analyst*, the only thing participants are explicitly instructed to do (by displayed text) is to try it *with someone they don't know*. This was important, because we wanted the discomfort of standing too close to a stranger to catalyze reparative action, and thus heightened attention to both the audio and to each other. All other cues for how to engage with the piece came from the physical arrangement of objects: two sets

of red footprints on a raised platform cued people where to stand, and thus both oriented them to be face-to-face and constrained the distance between them. A CD-player on a plinth had two sets of headphones extending from it, and the PLAY and STOP buttons on the player were labelled for emphasis. Even though both headphones extended from the same device, for some of the participants, I could see them discovering that they and their partner were, in fact, listening to the same thing.[9]



A figure describing stimuli presented to subjects in an fMRI study of brain activity in response to facial expressions and social hand gestures (Montgomery and Haxby 2008).

2. "In which these 'unfolding interactions' became the object of an experimental collaboration with a cognitive neuroscientist."

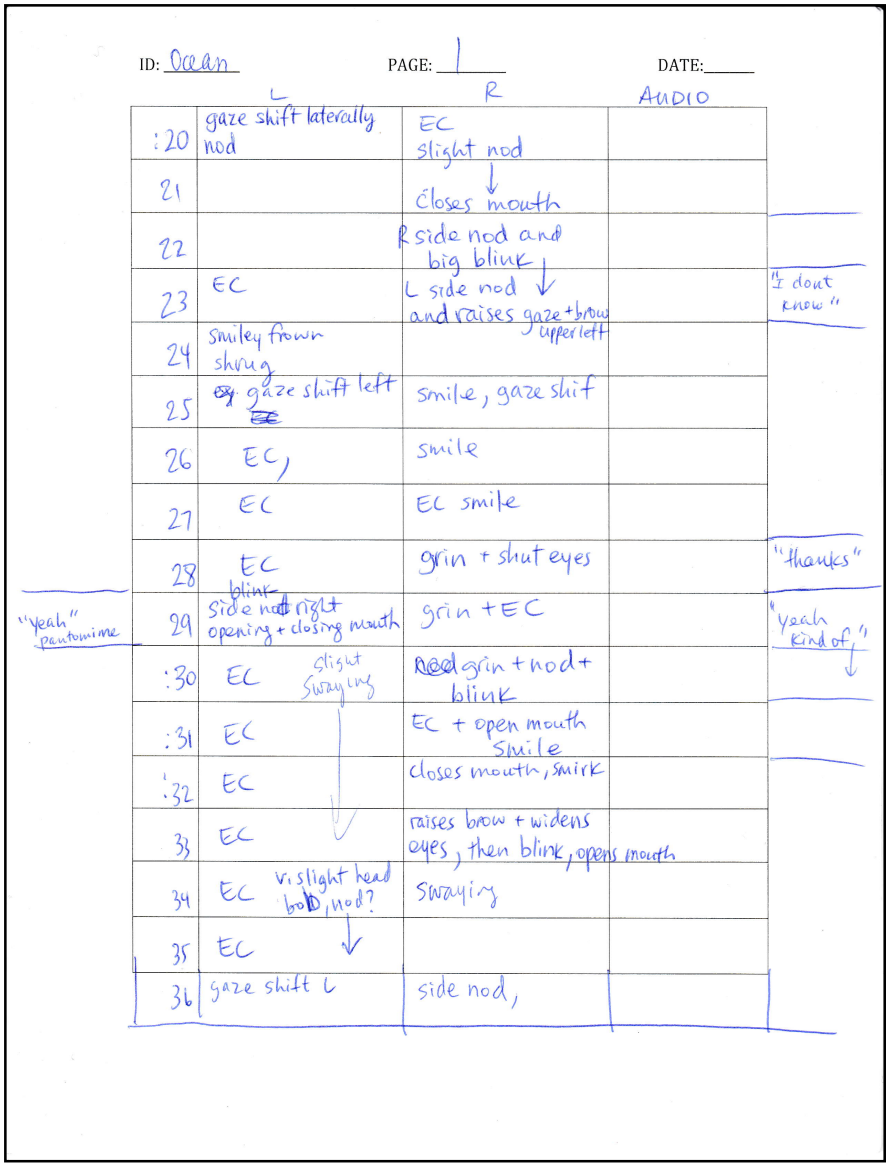
When I invited Jaime Pineda, a professor in UCSD's Department of Cognitive Science, to see *your position* at the gallery, I (as a graduate student) had already taken a class with him on the mirror neuron system[10] and had visited his lab a handful of times to observe lab members plan, troubleshoot and conduct a study measuring functional connectivity in the brains of Autistic and typically developing children. I invited Dr. Pineda because of his interest in embodied theories of cognition, and because I believed that these rich, nuanced interactions I was seeing in *your position* posed an interesting counterpoint to the kinds of experimental paradigms that Dr. Pineda, and many others, typically use in the lab to identify the neural correlates of social action. In order to identify what was happening in the brains of experimental subjects while they were engaged in interpreting or responding to socially relevant stimuli, researchers often used imaging technologies, like functional magnetic resonance imaging (fMRI) or electroencephalography (EEG).

Until recently, these technologies were quite restrictive in respect to movement, and, in the case of fMRI, in respect to the possibility of testing more than one individual at a time. Thus, even for cognitive neuroscientists who were interested in exploring how situated bodily *inter*action impacts

cognitive processes and their neural correlates, available technologies and conventional practice tended to restrict studies to researching immobilized and isolated individuals. In order to evoke socially relevant tasks, many such studies use videos of expressive faces (e.g., Montgomery and Haxby 2008, as pictured above), hand movements (e.g., Liew et al. 2011), and actionable objects and scenes (e.g., Iacoboni et al. 2005), to give a few examples. These stimuli flash on video screens, prompting a subject to respond according to a given task. Unlike the highly inter-responsive pairs in *your position*, these stimulus-response paradigms were largely *unresponsive* to the responses of participants. That is, regardless of participants' choices, the next stimulus would automatically appear. Thus, although the growing body of research on the neural correlates of social cognition has yielded highly impactful and important findings, there remain aspects of open-ended real-world interaction (like the complex, multimodal interpretation and response of an interlocutor) that could not be captured by this work. For Dr. Pineda, at least, this was already a matter of interest: how could the work they do in the lab become more generalizable to dynamic, real-world (or "ecologically valid") situations?

When Dr. Pineda tried *your position* and observed the richness in participants' emerging interactions, I asked him how might a dynamic interaction like this one be studied in the cognitive neuroscience lab. This question led to further discussion, and subsequently to our decision to consider this thought experiment through the practical experience of together examining the videos of people interacting in *your position.* In doing this, we were exploring how one might decompose the ongoing flow of behaviour into generalizable and computationally relevant components ("to code the video," as Dr. Pineda referred to it), while *at the same time* trying to retain a sense of the flow of intersubjective meanings that emerged locally for each pair.

We had wanted to begin from an intentionally naive position, allowing our strategies for analysis to emerge from the interactions we observed in *your position.* However, needing to decide on a practical method to do this, what we attempted to deploy was *video coding*, a technique that presumed gestures and communicative action to be composed of functionally similar (and therefore code-able) elements, like smiles, frowns, and nods. In *Analyzing the Analyst*, we can see Dr. Pineda suggesting that we could try looking at, and coding, each individual in isolation, and then comparing these two streams of code in order to identify communicative vs. non-communicative (or what he called "spontaneous") gestures, and myself agreeing, "Let's try that." The coding sheet we created and used for this purpose is pictured below.



ID: Ocean PAGE: 1 DATE:

	L	R	AUDIO	
:20	gaze shift laterally nod	EC slight nod		
21		closes mouth		
22		R side nod and big blink		
23	EC	L side nod and raises gaze+brow upper left		"I dont know"
24	smiley frown shrug			
25	gaze shift left	smile, gaze shif		
26	EC,	smile		
27	EC	EC smile		
28	EC blink	grin + shut eyes		"thanks"
29	side nod right opening + closing mouth	grin + EC		"yeah kind of,"
:30	EC slight swaying	grin + nod + blink		
:31	EC	EC + open mouth smile		
:32	EC	closes mouth, smirk		
33	EC	raises brow + widens eyes, then blink, opens mouth		
34	EC vi slight head bob, nod?	swaying		
35	EC			
36	gaze shift L	side nod,		

"yeah" pantomime

The coding sheet Dr. Pineda and I used in the analysis of interaction in *your position*. The left-hand column is the second-by-second time code of the video clip we are analyzing. In *Analyzing the Analyst*, our discussion focuses on gestures made between the :33 second marker and the :36 second marker of the video clip. EC is our abbreviation for eye contact. This coding sheet is the first of three pages for this session.

What we found, as we tried to proceed in this manner, was that we had trouble *naming* many events and gestures that were clearly communicative; indeed, looking later at videos of our own process of analysis showed that, when troubles arose in naming gestures, we relied more heavily on qualitative and embodied interpretation of what people might have *meant* when performing those gestures in the flow of interaction. As we attended to what any instance of, say, a frown might have been intended or taken to mean, we also became aware of the difficulty in assuming that phenotypically similar gestures were semiotically similar across the interaction.

We met eight times over the course of one academic quarter, with each session lasting between one and two hours. During our first meeting, I asked Dr. Pineda if we could record our sessions, and he agreed. At that time, I didn't know what these videos would be used for, only that they provided a

trace that would be available after our face-to-face meetings. For each subsequent meeting, then, I set up a tripod-mounted camera and microphone facing us as we faced the videos on the computer screen.

It was only in our last two sessions that we looked back at these videos of *ourselves* analyzing the video interactions of others. Our initial observations about our interactions were largely focused on our surprisingly numerous and varied enactments of the gestures and expressions we were trying to interpret and code. We speculated—as in the one scene in *Analyzing the Analyst* where we discuss our practices as analysts—about why we might be physically enacting these gestures, and what such enactments may facilitate. Creating this reflexive second layer of video data—allowing us to examine our own strategies as we analyzed the interactions of others—had raised questions rather than answered them: *Why, at any given moment, were we enacting or reenacting the gestures we were analyzing*? *To whom are those enactments directed, and what do they accomplish in terms of our interaction or the interpretive task at hand*?

3. "In which, to consider this, I attempt to restage our analysis with actors."

While an important part of the project includes taking up these questions with Dr. Pineda and doing a systematic analysis together of our video interactions, I was also interested in seeing how these enactments could be analyzed differently, and specifically through the logics and practices of theatre. In this, I wanted to maintain a reflexive approach—including myself as a participant in any such act of analysis—while being cautious not to introduce a recursive path that would again lead to the same questions (italicized in the previous paragraph) we had already identified with Dr. Pineda.

For a theatre director and actors working together to stage a play script, this process typically begins with some form of "table work"—sitting down with the text, reading through it and identifying and exploring the characters and events to be enacted. It seems important to stress here that, while table work has been counterposed to more movement-based processes of analysis and discovery (what is sometimes called "getting on your feet," or, when you no longer rely on the printed text and are thus less restricted in your movement, "going off book"), in practice the relation between table work and "on your feet" work is much more ambiguous, as *Analyzing the Analyst* suggests. While table work has a number of aims—including building familiarity and ease among the members of the group assembled, and experiencing the play script in a different modality through hearing it read out loud—one of the key functions of table work (but also of "on your feet" work) is to collaboratively analyze and discover the flow of communicative actions that constitute the play script's characters and events.

This is the task that three performers and I undertook on one summer day as we met for a day-long process of table work. The performers were all people I'd met socially while doing unrelated archival research at McGill University. Importantly, though all three had lives as performers, they hailed from very different performance traditions. Stephen Quinlan, the blond-haired performer playing the character "Y," is trained as a dancer and puppeteer. Fortner Anderson, the silver-haired performer playing the role of "J," is a performance poet, hailing from an avant-garde tradition of conceptual and performance art and embodied poetics. Of the three performers, only Francisco Rosas Gomez, the black-haired performer to play "Y," comes from a background of making theatre, both as a performer and as a director, even though he has in recent years moved away from theatre work to pursue an MFA in Intermedia Arts at Concordia. Jesse Freeston, a local filmmaker, shot the

entire rehearsal singlehandedly with two cameras, two shotgun microphones, and two Lavalier microphones.[11]

Staging a theatrical reenactment of our interaction seemed to offer multiple points of entry into the questions that Dr. Pineda and I had posed, and to productively centre the many-layered and multiply relevant act of reenactment itself. The most useful outcome of this strategy, I believe, was the sudden urgency of the problem of *what* to reenact. In other words, how could I set the scene for the actors, in order to make this interaction available to them? I chose not to show the actors the video of the interaction, but rather to make it "available" by transcribing the video-recorded interaction into a transcript that would constitute our play script.

In creating this transcript, I worked in the tradition of qualitative interaction analysis, specifically using a system of notation developed by Gail Jefferson (1938–2008), a social scientist involved in the study of "naturally occurring" interaction (Jefferson 2004; Hepburn and Boden 2013). Jefferson's style of transcription has been variously taken up by different approaches to interaction analysis, including conversation analysis (CA), discourse analysis (DA), and ethnomethodological approaches (EM). While the use of such transcripts differs in significant ways across CA, DA, and EM projects, it may be easiest to discuss what a Jeffersonian transcript presumes and is meant to do by juxtaposing it to the video coding that Dr. Pineda and I tried to deploy when analyzing videos of *your position*. Our attempts to code video operated according to the logics of content analysis, a *quantitative* method of analysis in which counting and coding allows a researcher to find regularities in their target phenomena. For *qualitative* researchers using Jeffersonian transcription, this sort of counting and coding "obscures the subtly contexted nature of conversational interaction as well as the sorts of turn-by-turn displays of understanding and repair that have been effectively used in conversation analysis" (Potter 2004, 205).

Instead, Jeffersonian transcripts take great care to notate events in the interaction that might be seen as extraneous or irrelevant to what participants are talking about, especially when those events seem to index communicative action as gauged by the responses of interlocutors. In the case of CA, for example, Jonathan Potter describes why researchers take great pains to notate what might be considered "unimportant" aspects of the interaction:

> Social scientists often treat talk as a conduit for information between speakers: there is a message and it is passed from one person to another. When we use this picture it is easy to imagine that what is important is some basic package of information, and then there is a lot of rather unimportant noise added to the signal: hesitations, pauses, overlaps, choice of specific words, and so on. For conversation analysts this view is fundamentally misguided. Rather than treating these features of talk as simply a blurred edge on the pure message, these features are treated as determining precisely what action is being performed as well as providing a rich analytic resource for understanding what that activity is. . . . It is for this reason that talk is carefully transcribed as it is delivered rather than being rendered into the conventional 'playscript' that is common in some kinds of qualitative work. (2004, 209–10)

In the tradition of this sort of analysis, the transcript is not a transparent window into a past interaction (just as the researcher is not transparent in regards to her research site), but rather is a document of an analyst's engagement with, and interpretation of, an interaction that was available to them. For this project, however, my choice of making a Jeffersonian transcript was not only because

of its qualitative orientation to the analysis of interaction, or because it was itself a mode of analyzing interaction, but also because such transcripts are themselves a means of re-presenting these interactions. In these sorts of analyses, transcripts thus partially constitute a possibility for disputing the analyst's interpretation. In other words, these transcripts—though emphatically disavowed as transparent presentations of the "actual" event—offer the opportunity for an "evaluation that readers themselves can make when they are presented the transcript alongside of its analytic interpretations" (Potter 2004, 204). For me, the issue of re-presentation or setting a scene is a deeply shared concern in both theatre and science, both of which passionately and painstakingly arrange the material discursive conditions through which a phenomenon can be experienced, interrogated, and known.

Thus, for a reader, the transcript provides a means for (painstakingly!) reconstructing a moment of meaningful interaction. For the actors I worked with, having no recourse to the video meant that they needed to orient to the transcript and explicitly reconstitute or *re-member* the different textual streams of action prescribed for their assigned character while they simultaneously searched for meanings that could give sense to the interaction they are playing; we are shown this beautifully in Part 3 of *Analyzing the Analyst* when performer Stephen Quinlan tries to re-member the words ("this very active thing that she did") with the gesture ("moving my hands in front of my face as if I'm washing my face") with the meanings and intentions potentially at play in their synchrony ("because you're talking about the person's face") as a creative, embodied process of analyzing that moment of interaction.

At the same time, these transcripts and their hyper-detailed gestural, tonal, and temporal notations posed particular challenges to the task of performing them. This can be seen in *Analyzing the Analyst* when performer Francisco Gonzales Rosas asks me if I think it is possible to "exactly" enact this densely notated script. Is it possible to eliminate one's "own natural reactions?" he asks. I reply, "I don't know, let's find out." This funny exchange hides a tangle of problems and propositions. Francisco, as someone who has a history in and deep understanding of theatre, is gently trying to probe whether I understand that this script, with all gestures choreographed and notated *ad absurdum* was misaligned, at its core, with the expectation in theatre that the actor should interpret the text, and that creating a gestural life is part of this interpretive achievement. Yet for me, what is interesting about this impossible and misaligned task is not the performance we make at the end, but rather our iterative process of reconstructing these interactions, and the resources we bring to bear on this particular sort of analyzing-by-doing. In other words, I pursue an investigation of Dr. Pineda's and my analytic practices by attending to the ways that the actors rehearse and reconstitute this interaction that they come to know *through the act of reconstituting it*. In this respect, of course, it is not only the performers' actions that are relevant here, but also my own interpretive responses and directorial interjections to guide the actors toward elusive nuances of the interaction, to call attention to the context or meaning of a gesture, or to correct the gestures, movements, vocal dynamics, and timing of the performers.

What Do We Do with This?

Here, with the *Analyzing the Analyst* video and this supplementary text, I have presented the materials and methods of a project that aims to explore practices and concepts of embodiment in theatre and cognitive neuroscience, in advance of presenting and discussing the project's findings.

I began editing video to make *Analyzing the Analyst* in mid-August, 2017, and in the midst of this two-month-long editing process, I have felt closer to and more passionate about this material than ever before. And I felt the extent of that passion in the pain of all that I have had to omit in the final twenty-minute video: all the fascinating, surprising interactions that reveal so much and yet resist explanation. But this very issue—how to make present an irreducible phenomenon, an experience, an emergent field of interaction—is a problem that I, as filmmaker, share with the I in the cognitive neuroscience lab, the I in the rehearsal room, and the I making transcripts in order to see and make available the nuances of what's happening, and thus in order to know more, or differently.

I worry that, for scholars of performance, the video might inspire the interpretation that a scientific or linguistic approach to analyzing communicative behaviour is an impossible or laughable enterprise. That is the inverse of my intention throughout this laborious and time-consuming work. Instead of reading these juxtapositions of performance, lab, and rehearsal as disciplinary divides through which we condemn or applaud one set of practices while validating our own, I hope that these juxtapositions can orient us to how much we already know about meaningful human interaction, through both explicit and tacit modes of analysis in each of these spheres of activity.

The sort of layering that is afforded by the video is meant to undercut a straightforward comparison of these sites, in which the comparer resides comfortably outside the phenomena she is comparing. So, for example, a comparative reading might pit my interpretive approach against, say, Dr. Pineda's. This sort of comparison makes critique easy, and could, I imagine, support an argument that condemns scientific approaches as reductive or compromised by falling short of a purported objectivity. Yet this criticism would miss the important ways that tacit and embodied ways of knowing flow through even the most earnest attempts at reduction in all of these sites. To undermine this assumption of stable, pre-defined disciplinary presumptions and methods, I am embedded in and indebted to each of these material-discursive situations. In this way, I want to foreground the native interdisciplinarities and particularities in each situated encounter as they are registered through my many "I"s.

What to do with this? For me, I will continue working with Dr. Pineda and actors to take up the materials and methods here, and focus on analyzing specific intersections across these. Thus, for example, Dr. Pineda and I can investigate our own reenactments of, say, "front-nods" and "side-nods" by looking at the ways in which the actors and I attempt to reconstitute these actions. In this way, by using these layered situations and myself as both agent and instrument for registering meaning,[12] I hope to complicate the simple application of theatre to cognitive neuroscience, or vice versa, by calling upon and toggling between the logics of both, in practice. For theatre scholars who engage with cognitive sciences, I hope to suggest that *methodological* encounters between these sites of engagement can offer ways to explore these relations while resisting scientism on the one hand, or oppositional critique, on the other.

Notes

1. "Supplementary Material" is the category title used by this online journal for content that cannot be included in *Performance Matters*' primary interface, which is a PDF Reader. Thus, for a case like this one, where the text is supplementary to the video, and not vice versa, there is no way to indicate this formally, outside an assertion in text, as I am making here.

2. An explicit instance of such an oppositional relation can be found in Stefan Helmreich's *Silicon Second Nature* (1998).

3. Of course, I hope it is clear from my stated aims here, but even more so from the video itself, that I do not take *data* to mean that which is given and prior to engagement; my use of data follows what Johanna Drucker called *capta*, phenomena that are not given but rather captured in particular ways, and thus always already presuppose an interlocutor. My project takes up Drucker's imperative to design interpretive and analytic systems based on humanistic and probabilistic premises (Drucker 2011).

4. My use of "experimental" is meant to gesture toward the use of the term both in the theatre and in the lab. My sense of what delineates these practices as experimental is close to how scholar and poet Joan Retallack described it: "Experiment is conversation with an interrogative dynamic. Its consequential structures turn on paying attention to what happens when well-designed questions are directed to things we sense but don't know" (2007).

5. This was pointed out to me by Sarah Klein, who provided invaluable feedback on an earlier draft of the video.

6. See the anthology *Practicing Comparison: Logics, Relations, Collaborations* for a number of views on how comparison might be re-conceptualized in practice (Deville et al. 2016).

7. *Enter>text* is a series of immersive literary events, curated by Henry Hoke and Marco Franco di Dominico (http://henry-hoke.com/ENTERtext).

8. In earlier versions, we had tried various configurations for the voices in the recording: a dialogue between a male- and female-presenting voice, between two female-presenting voices, and two male-presenting voices. We found that, when the voices were male-female, this tended to overdetermine how the participants related to the material and involved less moment-moment negotiation between pairs. Thus, when we presented the piece at the San Diego Art Institute, during a group exhibit called *Ephemeral Objects*, curated by Andy Horowitz, we used a recording with two male voices. While this choice could be critiqued as reifying the neutrality and transparency of male voices, it could equally be defended as not adopting the female recorded voice as the default in situations where recorded voices are in the service of human action. While of course these issues are crucial in the tacit meanings that such choices propagate, our decision to use two male-presenting voices (and not two female ones) in this iteration of the piece arose from the fact that two friends with male voices, Grant Leuning and Eric Leonardis, were available and willing to come to a recording session.

9. The pair that we see most in *Analyzing the Analyst* were actually recorded a week before the exhibition officially opened. These recordings were initially made for another piece that would be exhibited at the same show: *their position*, made with Eric Leonardis in response to *your position*. The younger of the two participants is Ocean Bell, (at the time) an eleven-year-old family friend who, with his father, accepted my invitation to be recorded while trying the piece. His interlocutor is a high school student who was assisting with the installation of an adjacent exhibition of student work, and who I invited on site. Though this pair differed from many others who were simply attending the gallery, however, the sort of nuanced, dynamic interaction that characterized their response to the installation was seen, in some form, in the majority of the pairs I watched doing the piece. (Names were used or omitted according to participants' and their guardians' consent.)

10. The mirror neuron system (MNS) refers to groups of cells in the brain that have both motor and sensory function, and are active both when a research subject makes a goal-oriented movement, and also when they simply observe that movement being done by another. It is still a matter of debate among cognitive neuroscientists whether these cells can be thought of as a system, and thus is sometimes referred to as the "putative MNS" (Recent surveys of this literature include Kilner and Lemon 2013; Campbell and Cunnington 2017).

11. When I had asked Jesse to document the process, I already anticipated that the video material from this rehearsal would be somehow brought to bear on the other two layers of video material. The performers and the filmmaker were each paid about $100 for the day's work. In the case of the performers, each had been invited to participate because they'd previously expressed interest in the project.

12. See Klein and Marghetis (2017) in this issue for a different example of this reflexive approach.

References

Blair, Rhonda, and Amy Cook. 2016. *Theatre, Performance and Cognition: Languages, Bodies, and Ecologies.* New York: Bloomsbury Methuen Drama.

Campbell, Megan E. J., and Ross Cunnington. "More Than an Imitation Game: Top-down Modulation of the Human Mirror System." *Neuroscience & Biobehavioral Reviews* 75: 195–202.

Cook, Amy. 2007. "Interplay: The Method and Potential of a Cognitive Scientific Approach to Theatre." *Theatre Journal* 59 (4): 579–94.

Deville, Joe, Michael Guggenheim, and Zuzana Hrdličková. 2016. *Practising Comparison: Logics, Relations, Collaborations.* Manchester: Mattering Press.

Drucker, Johanna. 2011. "Humanities Approaches to Graphical Display." *Digital Humanities Quarterly* 5, No. 1: 1–21.

Falletti, Clelia, Gabriele Sofia, and Victor Jacondo. 2016. *Theatre and Cognitive Neuroscience*. New York: Bloomsbury Methuen Drama.

Iacoboni, Marco, Istvan Molnar-Szakacs, Vittorio Gallese, Giovanni Buccino, John C. Mazziotta, and Giacomo Rizzolatti. "Grasping the Intentions of Others with One's Own Mirror Neuron System." *PLoS Biology* 3 (3): 529–35.

Jefferson, Gail. 2004. "Glossary of Transcript Symbols with an Introduction." In *Conversation Analysis: Studies from the First Generation*, edited by G. H. Lerner, 13–31. Philadelphia: John Benjamins.

Kilner, James M., and R. N. Lemon. 2013. "What We Know Currently About Mirror Neurons." *Current Biology* 23 (23): R1057–62.

Klein, Sarah, and Tyler Marghetis. 2017. "Shaping Experiment from the Inside Out: Performance-Collaboration in the Cognitive Science Lab *Performance Matters* 3 (2): 13–37.

Knorr-Cetina, Karin. 1981. *The Manufacture of Knowledge: An Essay on the Constructivist and Contextual Nature of Science.* Oxford: Pergamon Press.

Latour, Bruno, and Steven Woolgar. (1979) 1986. *Laboratory Life: The Construction of Scientific Facts.* 3rd ed. Princeton: Princeton University Press.

Liew, Sook-Lei, Shihui Han, and Lisa Aziz-Zadeh. 2011. "Familiarity Modulates Mirror Neuron and Mentalizing Regions During Intention Understanding." *Human Brain Mapping* 32 (11): 1986–97.

Lynch, Michael. 1985. *Art and Artifact in Laboratory Science*. London: Routledge & Kegan Paul.

Mol, Annemarie. 2002. *The Body Multiple.* Durham, NC: Duke University Press.

Montgomery, Kimberley J., and J. V. Haxby. 2008. "Mirror Neuron System Differentially Activated by Facial Expressions and Social Hand Gestures: A Functional Magnetic Resonance Imaging Study." *Journal of Cognitive Neuroscience* 20 (10): 1866–77.

Potter, Jonathan. 2004. "Discourse Analysis as a Way of Analyzing Naturally Occurring Talk." In *Qualitative Methods: Theory, Method and Practice*, 3rd ed., edited by David Silverman, 200–21. London: Sage.

Retallack, Joan. 2007. "What Is Experimental Poetry and Why Do We Need It?" *Jacket* 32. http://jacketmagazine.com/32/p-retallack.shtml.

Spatz, Ben. 2015. *What a Body Can Do: Technique as Knowledge, Practice as Research.* Abington: Routledge.

Varela, Francisco, Evan Thompson, and Eleanor Rosch. 1991. *The Embodied Mind: Cognitive Science and Human Experience.* Cambridge, MA: MIT Press.