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Imagination as Joint Activity: The Case of Architectural Interaction

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This article draws from the insights offered by discourse analysis and the study of gesture to examine imagination as a product of, and resource for, social action. Using data collected during ethnographic fieldwork at an architecture firm, the article explores how imagining can emerge from a group of interactants who use many semiotic media, including talk, gestures, and drawings, to imagine something together. Following the groundwork laid by Benedict Spinoza, this perspective moves the "object" of imagination out of the brain, away from mental imagery and into the space in which shared activities take place. Such a move has implications for rethinking imagination in terms of communicative interaction and social activity.

This article offers a perspective on imagination that takes into account how its active form, *imagining*, is used in, and often constituted by, social, face-to-face interaction. Drawing from the insights offered by discourse analysis and the study of gesture to examine imagination as a product of, and resource for, social communication, I explore how imagination can function as a communicative group activity rather than as a purely individualistic cognitive capacity. Workplace contexts, which generally facilitate goal-oriented joint activities (e.g., Engeström, Brown, Engeström, & Koistinen, 1990; Middleton, 1998; Suchman, 1998), are ideal locations for examining the social-cognitive power of interpersonal communication in context. Using data collected during ethnographic fieldwork with a team of architects, I hope to show how imagining can emerge from a group of interactants who use many semiotic media available to them in their social surround to imagine something *together*. These semiotic resources include the participants' talk, their gestures, and the architectural drawings that they talk about. Following the groundwork laid by the philosopher Benedict Spinoza, this perspective moves the "object" of imagination out of the brain, away from mental imagery and into the space in which shared activities take place. Such a move, I hope, has implications for how imagination can be rethought of in terms of many types of communicative interactions and social activities.

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A VERY BRIEF HISTORY OF THE MENTAL IMAGE

There has been a long-standing tendency to conceive of imagination, as the term itself implies, as an image-oriented mental activity. For rationalist philosophers like Descartes and Empiricists like Locke and Hume, the *object*, the thing being imagined, is the focus of imagination (Warnock, 1976). This object is generally treated as a mental representation of some sort that exists in the brain and can be viewed by the "mind's eye" with differing degrees of intensity (to what degree depends on a given theorist's attitude toward imagination). For Descartes (1641/1993), "to imagine is nothing else than to contemplate the figure or image of a corporeal thing" that we have already experienced in the world (p. 53). This position, later taken up and elaborated by Hume, when extended to include the totality of experienced material things, inaugurates the longstanding idea that what we imagine is formed from an amalgamation only of images of things we experience external to the body. This either implied or even necessitated a distinction between what is "imaginary" (mental images) and what is "real" (corporeal things), and imbued within all forms of cognition, including imagination, a parallel separation between "fiction" and "truth."

For Kant, imagination is the mental faculty that allows for synthesizing sensual events into discrete categories of experience such that perceiving is not one continuous and undifferentiated flow of sense–data but instead involves the collecting and classifying of sense–data based on previous experience with similar types of worldly phenomena. Imagination, in Kant's view, is inherent in perception, not separate from it, because in the act of perception imagination provides the categories into which appearances of things are placed, and in that moment constitutes "apprehension" of them (Kant, 1787/1965, p. A120). This apprehension is mediated by imagistic schemata, perhaps the central concept passed on to cognitive science from Kant. Only several centuries after Kant, once Husserl began to explore the concept of intentionality, was the world philosophically equipped to deride the nature of the mental object, even going so far, as did Gilbert Ryle and Jean-Paul Sartre, as to deny its very existence.

IMAGINATION AND SOCIAL ACTION

In approaching imagination as social action (see Wertsch, 1994) I am consciously focusing on the distinction made by Casey (1976) between imagination as a relatively passive cognitive function and the situated *use* of imagination for some purpose in social, interactive contexts, a distinction that has for the most part been backgrounded in philosophy and psychology. Inspiration for this point of view comes from an unlikely source. In his *Ethics* Benedict Spinoza proposed a theory of mind in which, unlike Descartes' strictly dualistic rendering of body and mind, there exists only one Substance equally separated into corporeal and mental domains. According to this almost proto-situated cognition stance, mental activities, including imagination, are necessarily dialectically related to the body and its contact with the external world. As such, for Spinoza "imagination is … a form of bodily awareness" (Gatens & Lloyd, 1999, p. 12). Indeed, rather than being some capacity situated merely in people's brains, "[t]he first thing that actually constitutes the actual being of the human mind is simply the idea of some particular thing which actually exists" (Spinoza, 1677/2000, p. 122), or, first and foremost, the body (Spinoza, 1677/2000, p. 124). If, then, mind is constituted through its awareness of the human body, and to have the idea of the body requires awareness of other bodies through physi-

cal contact with them (Spinoza, 1677/2000, p. 135), what Spinoza calls "bodily modifications," then all mental activities must necessarily be mediated by the human body interacting with the material world. In this way, for Spinoza "[t]his experience of other bodies together with our own is the basis of imagination" (Gatens & Lloyd, 1999, p. 14) and imagining can be treated as an embodied activity. I interpret bodily modifications to include any contact with the external world that in any way affects a body's senses, including tactile, visual, aural, and others. Thus gestures that are seen, material objects that are felt and seen, people's words that are heard, a potentially limitless number of things and actions that bump up against people's bodies in some way can all contribute to imagination.

In this view, then, imagination is not solely confined to the inner recesses of the brain. Instead, imagining is a social and embodied activity that is supported by material objects, mediated by gestures, initiated by conversation, and maintained through the external force of all of these things as they are simultaneously employed in imagining while interacting with other social beings. Gestures, talk, and material objects are symbolically used to create in physical space what is being imagined by the interactants (cf. Hutchens & Palen, 1991). While it is difficult to access mental imagery "in the minds" of participants, we can look to the products of their actions to see that their minds are engaged in collaborative creative activities whose meanings are necessarily anchored in the interactive context of occurrence. In other words, the imagined scenarios as such would not themselves exist without the use of these semiotic media.

When imagining is conducted in the social world, it is first and foremost the perceptual apprehension of the material surround in terms of its actual and potential meaningfulness. It is the ability to creatively make talk, gestures, and material objects stand in for or signify things that are not immediately perceived, and in the processes treat them as if they were. Imagination is then a sort of subjunctive cognitive function that is involved in the "trafficking in human possibilities rather than in settled certainties" (Bruner, 1986, p. 26), a "what- if" way of thinking separate from, but indeed connected to, activities such as problem solving, learning, and reasoning. It is creative in that it synthesizes separate elements, be they mental images, concrete objects, talk, and gestures into new and meaningful entities that never in and of themselves existed prior to the act of imagining.

In all of the descriptive musings surrounding imagination I think there are indeed useful concepts. However, the useful elements are too often drowned amidst distinctions between real and unreal, image and object, and internal and external that serve only to complicate our understanding of an already complicated topic.

We do, in fact, "imagine" things. And we do, as Ryle (1949) claimed, "imagine that" things undergo certain circumstances and exist in particular contexts. The early philosophical bias toward imagistic renderings of imagination is somewhat understandable given the elevated status of the sense of vision in all of western philosophy, religion, and science. Yet that object-focused bias, that we see *things* in particular, has prevented us from noticing that we also see things engaged in activities and actions and engaged in complex (i.e., not just spatial) relations with each other, we perceive things like temperature, emotion, and age in things and we assign value to them, often in the moment of perception (cf. Damasio, 1994). All of this, when translated into imagination, is not well represented in a purely imagistic theory of thought–objects.

I assert, following Kant, that perception and imagination are intimately linked. Unlike Kant, however, I think that it is not only that imagination aids perception, but also that perception aids imagination. Imagination can involve a special kind of perceiving that I call *perceiving in the hypothetical mode*, that is, purposefully seeing things as if they were something else, imaginary

things created with gestures, talk, and objects.[1] In this way, things in the world—because of the particular meanings assigned to them and the configurations of "upgraded visibility" (Lynch, 1985) into which they are often intentionally placed in interaction—aid in imagining particular *other* things: pencils, when placed over plans, become walls and hands, when moved through drawn gates on the plan, become trucks.

ARCHITECTURAL IMAGINATION

I illustrate my point by providing an analysis of an interaction among three architects recorded during a 6-month ethnographic project in Los Angeles. The work of modern architecture requires a large number of group interactions between individual architects as well as with other professionals like engineers and contractors, and with the clients who eventually will occupy the building. Because the building under discussion in the following examples—the main focus of all of these interactions—does not yet exist in its final form, the parties involved in the building process must constantly imagine what it is they are all talking about. For a group of architects working together on a building's design, it is crucial to make sure they are all "on the same page" with respect to their project. This is largely facilitated by shared architectural drawings that capture the unfolding design in graphic form, but also by continuous meetings in which discussion of fine details and large issues promotes a sense that everyone is thinking about the building in the same, or at least a similar, way. Much of a building's design, in fact, emerges out of problem-solving discussions in which different architects can check and balance individual ideas about the project's details against mutually accessible, and partially indisputable "facts" like drawings. Indeed, when a group of architects talks about a design, using drawings and talk and gestures to explain ideas to the group, what emerges, in the moment of the interaction, is a temporarily imagined building suitable for the purpose at hand, that is, for getting the group to imagine a building, to "see" the design right in front of them in the same way.

I first provide a transcript[2] of the entirety of the short interaction analyzed later. Because architect-talk can sometimes be difficult for nonarchitects to understand, the transcript is followed by a less technical gloss of the conversation. Following that, the transcript is broken into four segments and the interaction is analyzed in terms of how it relates to imagination.

The Transcript

These architects, named George, Mark, and Julie, are designing a large laboratory building for a university in the Southwest United States. This particular discussion centers on the service yard

[1]Such a position opposes the strict division between imagining and perceiving advocated by Husserl and the phenomenologists (Kearney, 1991). The phenomenologists' formulation, however, distinguishes between one thing as it is perceived and that same thing as it is imagined, for instance a book on the table in front of me or that book as I imagine it, the same real/unreal divide underlying rationalist and Empiricist treatments of imagination. While, like the phenomenologists, I continue to view imagination as an *act* of consciousness and not some *thing* held in the mind, my formulation, in contrast, posits a relationship between things perceived and what sorts of imaginings they stimulate.

[2]The transcript conventions used here are a modified version of those used by conversation analysts (e.g., Sacks, Schegloff, & Jefferson, 1974). Brackets indicate overlapping talk, and timed pauses are indicated in parentheses. The images of the drawing are intended to give the reader an idea of the kinds of action being performed by the architects. The lines that appear on the video-stills or the drawing were added for emphasis. The boxes around particular utterances represent the approximate timing of a co-occurring gesture, which is described in lighter text adjacent to the transcript.

area of the building, where the loading dock will be located. Trucks bringing supplies for the laboratories will also enter here. It will be a partially open area in the back of the building, and at this point in the conversation the architects are particularly concerned about access to the loading dock.

29	George	Well (.) why- why not put
30		a ramp here regardless?
31		For- to get up to the loading dock?
32	Mark	Irregardless::
33		(1.0)
34	Mark	To do what?
35	George	Just to get you to up to the loading dock.
36	Mark	Well we've already got a ramp.
37	George	It's [true.
38	Mark	[>Why do we need another one?<
39	George	(I guess) that's true.
40	Julie	Wha- What Mark and I were talking about is (.) um.
41		We got rid of that door because we were saying-
42		we were only showing stairs.
43	Julie	And this was only for *heavy* (0.3)
44		sort of [forklift items
45	George	[*Mm-hmm.*
46	Julie	[that are gonna go straight in here
47	Mark	[Big ticket items.
48	Julie	so that door was kind of-
49	George	Sure.
50		(1.0)
51		So everybody comes around that way.
52		[I see. Of course. Of course.
53	Mark	[Right. Right.
54	Julie	[And-
55	Mark	[You can (panel) trucks that pull in.
56		Most of their stuff will just be
57		carted right in there.

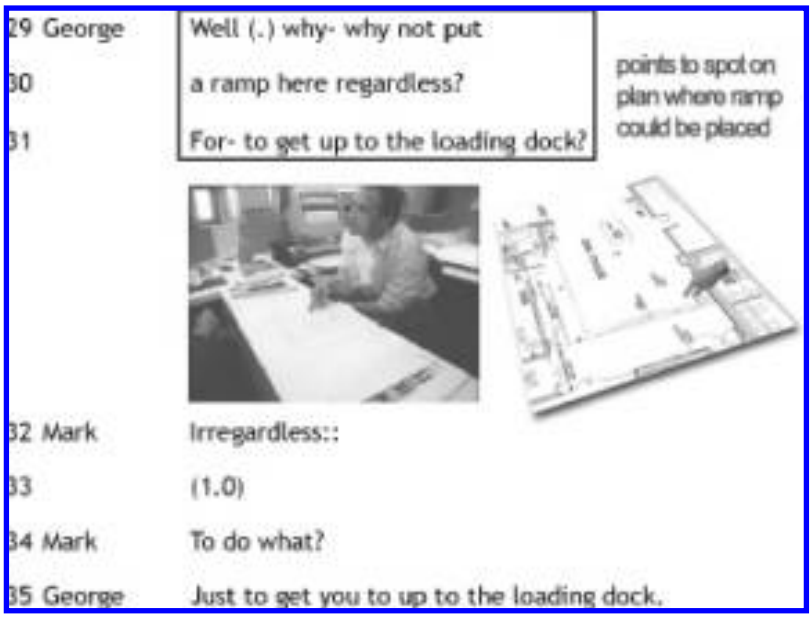
29–31: George suggests adding a ramp that runs from the ground up to the loading dock.
32–34: Mark makes a joke that refers to a previous conversation, then asks George to repeat himself.
35: George repeats that the ramp would be used for people to access the loading dock from the ground.
36–39: Mark asserts that there's no need for a ramp in addition to the one they've already included on the plan, and George agrees.
40–48: Julie tells George about a previous conversation with Mark concerning this part of the design. They removed a door from the spot on the plan where George suggests adding a ramp. This was because the door (and by implication, another ramp) was unnecessary due to the fact that the area where it had been would only be used for bringing in large things by forklift and would not be used for general foot traffic. Mark elaborates.

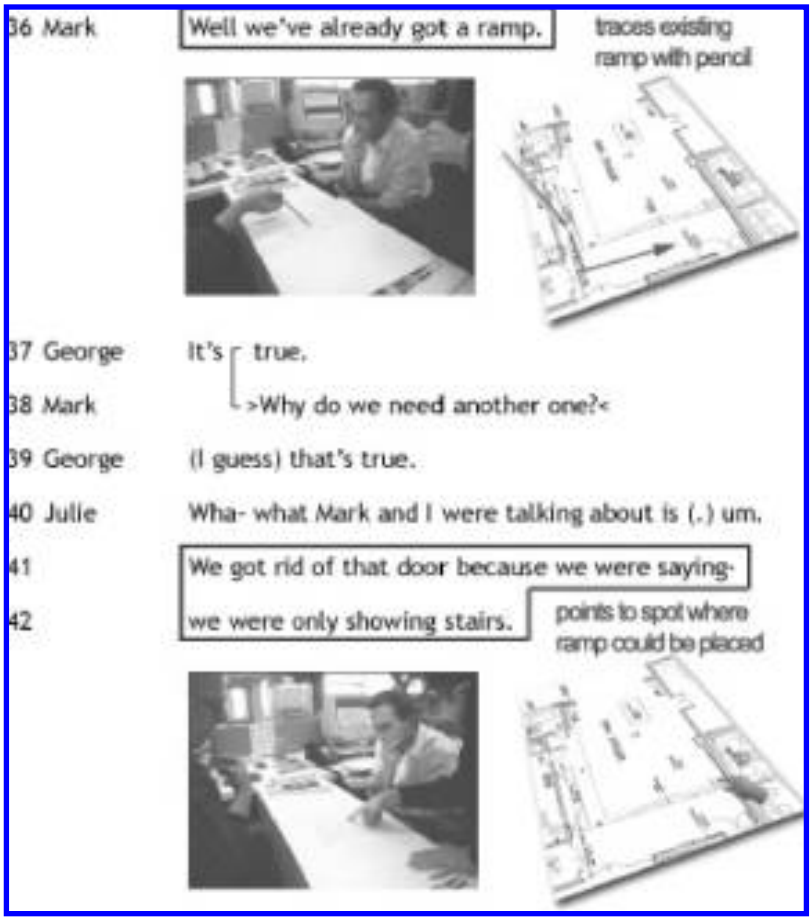
49–52: George acknowledges that he understands, hesitatingly at first, and then when full understanding follows he offers his own assessment of how the space will be used.
53–57: While Julie attempts to add more information, Mark continues to elaborate how the space will be used, describing how trucks will enter and will be unloaded.

Now by adding images and descriptions of gestures to the transcript we can begin to see how the architects use various resources together not just to talk about the design, but to collaboratively create part of an imaginary building which in turn influences the unfolding of the design.

Fragment 1

George, the head of the group, suggests the team add another ramp to the loading dock in the service yard, in addition to the one already drawn on the plan. He points to where it would go on the plan and holds his finger there, describing the ramp's purpose as "to get up to the loading dock." Mark, after making a joke about the word "regardless" that is irrelevant to our purpose at hand here, asks for clarification (line 34) and George repeats his explanation (line 35). This is the initial establishment of this particular area of the loading dock as a crucial element in the design. By drawing attention to the ramp with both words and a pointing gesture oriented directly on the plan, George is able to calibrate his teammate's perceptions and maximize his chances that they will understand his new suggestion. This first step thus facilitates the group's organization into a shared orientation for imagining this part of the building.





Fragment 2

Mark responds to George's suggestion by insisting that they have already included a ramp up to the loading dock (line 36). With this utterance he uses his pencil to trace the ramp's path from the ground up to the loading dock.[3] This gesture serves not only to point out where the ramp is in relation to the rest of the plan, but also to define for the group (specifically for George) the length and orientation of the ramp. Moreover, George begins his tracing gesture from the "ground" and moves "up" the ramp to the loading dock, paralleling George's previous utterance "just to get you up to the loading dock." This utterance and gesture are followed by George quietly agreeing, "it's true" (line 37). By deliberately demonstrating that they have al-

[3]Although architectural drawings are strictly two dimensional on paper, there are ways to represent three-dimensionality on them. Lines of different weight may represent different wall thicknesses or materials, and dotted lines represent parts of the building that may overhang elements below that are also reflected on the plan. In addition, heights, lengths, widths, and depths can be marked with actual numbers if it is not made clear on the drawing.

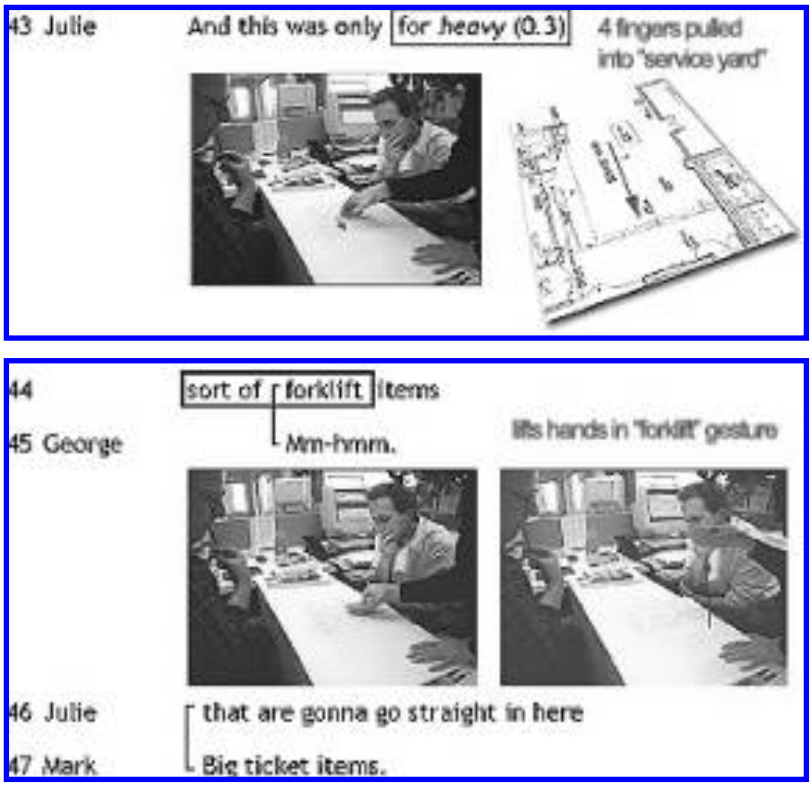
ready drawn in a ramp on the plan, Mark is safe to ask the question his gesture and utterance have been hinting at, "why do we need another one?" (line 38).

The way the architects conceive this loading dock, then, is being interactively structured by the ways in which they perceive the plan laid out before them. Talking about why "you need" to have ramps requires a somewhat empathetic perspective on the part of the architects with the people who will use the building. This perspective entails that the architects collaboratively work through the pros and cons of individual design elements, elements that must always be taken into account in relation to a larger design context. Thus one ramp's usefulness needs to be compared to that of the existing ramp. To do this comparison as a group, while maintaining an empathetic perspective to user experience, requires the architects to imagine the building not just as a series of lines drawn on a piece of paper, but as an actual, usable thing. Drawings are not sufficient for accommodating this process alone, so talk and gestures, when directed not just at the interlocutors but also at the plan and what it represents, are key components for accomplishing this joint imagining. George and Mark's somewhat simple pointing gestures, then, are not merely referring to some element of the drawing, but are reliant upon each other and the emergent talk to structure each architect's perception of the drawing (and hence, the design) and in turn, through group imagination, influence how each architect conceives it. This necessarily is occurring in the social, interactive space in which the plan is located.

Julie joins in the debate by explaining to George that she and Mark had already eliminated a door that had been on an earlier version of the plan (line 41). While doing so she points to where the door had been drawn, and then points to stairs that are still drawn on the plan. These stairs would be replaced by the ramp George had suggested. This pointing gesture serves to reorient George, who from Julie and Mark's point of view is causing minor problems in the conversation and the advancement of the design, to the problem areas of the design. Now we can see that all three architects are oriented to the loading dock and its access-ways directly because each has pointed to the problem areas. Yet more importantly we should note that these pointing gestures are not situated in a context-free verbal environment but exist in the midst of a problem-solving activity. Each pointing gesture is an attempt to get the other architects to see the plan in a certain way, which in turn requires them to imagine how the space will be used. Because Julie and Mark had previously discussed this element of the design without George, Julie's task is to get George to understand why a new ramp is unnecessary. She needs him to imagine the space being used in a particular way and simply talking about it cannot convey it.

Fragment 3

In line 43 and 44 Julie describes the access-way into the service yard up to the loading dock. She places the tips of her fingers and thumb on the plan and slides them toward the loading dock while saying "and this was only for heavy …," mimicking the forward motion of what we soon learn is a forklift. In the following line she continues with "sort of forklift items" and lifts her flat hand off the plan and briefly holds it in the air. Thus with two quick and simple gestures she converts the plan from a static representation of a service yard and loading dock into the holding ground for a displayed activity that demonstrates how this yard will be used once it is constructed. The shape of her hand in the first gesture is more massive than the pointing gestures we have seen so far, contrasting the "human scale" of the ramps made for people, and the loading dock, whose

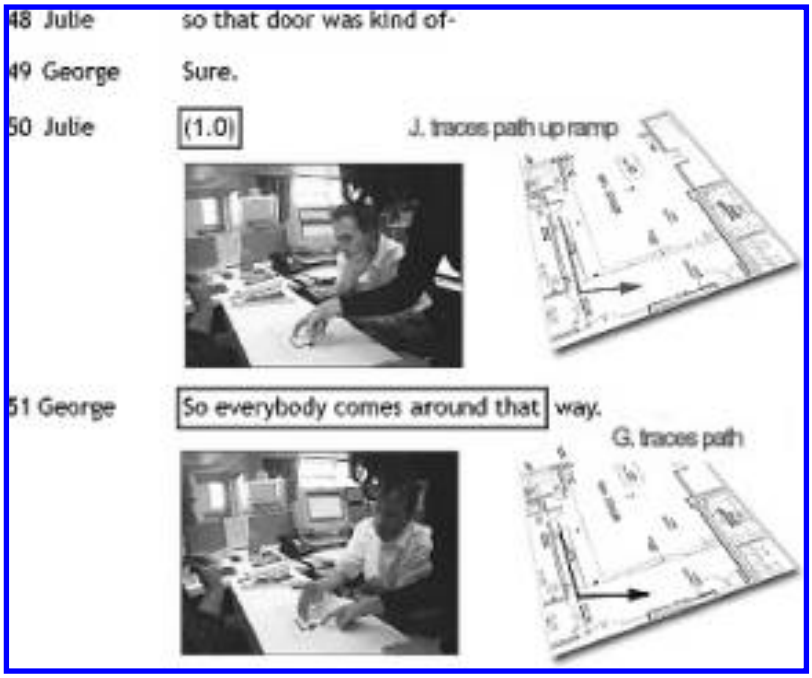


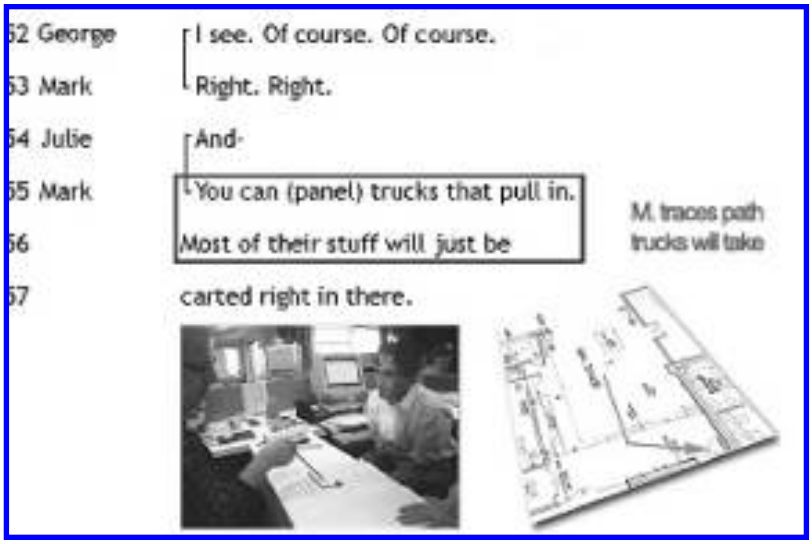
use will be for vehicles (comparatively more massive entities) as she now displays. Moreover, Mark is able to elaborate this idea by describing, in line 47, that the forklift will carry "big ticket items." The cumulative effect here is that Julie has shown, with the help of Mark's addition, how the future loading dock will work by treating the plan as if it were a loading dock and her hand as if it were a forklift. This imaginative demonstration relies on the fact that they are attempting to get George to see the uselessness of his previously suggested ramp. To understand this gesture fully, then, one needs to take into account not only the co-occurring talk, but also what this gesture relates to in terms of its placement in the problem-solving and, importantly, imaginative, activity.

Fragment 4

Julie continues in line 48 by saying "so that door was kind of …," choosing not to continue her thought, but implying that the door was unnecessary. In light of the previous fragments, we can see that this is because the loading dock was only really for getting large things, and not people, into the building. Then, during a one second pause, she moves her extended index finger up the ramp that is on the plan and across the loading dock. George at last sees what Julie and Mark had been arguing about, and in line 51 follows Julies trace with his own finger, saying "so everybody comes around that way, I see." Here George is finally able to imagine how this loading dock will function and re-

flects his understanding in his gesture: the loading dock will primarily be used to move large objects into the building and people will not really need to use it very much; because there already exists a ramp on the plan, adding another one, especially when there is no longer a door into the building on that side of the loading dock, is unnecessary; if somebody needs to get up to the loading





dock from the ground they can follow the path he traces with his finger. Mark then continues and uses his pencil to trace the path that trucks will use to get into the loading dock area, describing how future users will use the space.

What we have then is all three architects visualizing and enacting the space as if it were a "real" loading dock to clarify its use and orient the other architects to their understanding of the design. This has a utilitarian purpose in that when designing large buildings it is extremely important that everyone on the team is on the same page in terms of where the design is at any given moment and where it is heading. But it also has more cognitive implications. For the architects, designing a building often requires taking on the perspective of a future user experiencing the building to work out potential design kinks. By talking about a design in groups, an empathetic viewpoint is constructed through the interactive give- and-take flow of the conversation. Talk, gestures, and the drawing under discussion all in combination serve to structure the kinds of things the group can imagine as if they were the users, and this group imagining facilitates getting the job of being an architect done.

CONCLUSION

In positing imagining as *perceiving in the hypothetical mode*, I am taking up Spinoza's latent critique of duality and attempting to collapse the distinctions between internal and external, between mental objects and material objects, between real and unreal. Using the model provided by situated cognition, enhanced by ethnographic approaches to discourse analysis (e.g. Goodwin, 1995, 2000), imagination can be viewed in some circumstances as a goal-oriented activity in which people are imagining for some consequential purpose. This can be, as has been demonstrated by the architects described previously, an integral part of the everyday mechanics of one's job, or as what is thought to be a more traditional purpose for imagining, a form of "escape." Whatever its purpose might be, which is generally contingent upon the context of the act's occurrence, this form of imagining is always mediated by objects: not just mental objects, although surely they can play a part, but also by material, verbal, and gestural objects that all serve, in various ways, to help constitute the act of imagining. These objects are often used in combination with one another, in creative synthesis, to construct new meanings in settings that are often socially accomplished and shared.

I do not wish to make the claim that all imagining occurs in this way, nor do I wish to imply that imagination does not in some way deal with images, mental or otherwise. I do want to call attention, however, to a widely neglected aspect of imagination by examining its active form, *imagining*, as it occurs in social and material contexts. In so doing I am following the lead of the anti-imagistic philosophers, such as Ryle and Sartre, by questioning the nature of mental images. Unlike Ryle and Sartre, however, who challenge the doctrine of the "ghost in the machine" and "illusion of immanence" based primarily on the *content* of imagination and how it relates to the brain as its place of residence, my critique takes another approach and instead focuses more on challenging the actual holding ground for imaginary content in whatever form it takes. Objects of imagining, in my view, can exist in social space at the intersection of a number of publicly accessible resources people can bring to bear on an interaction, including gestures, talk, and material objects.

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