DIAGRAMMATIC INTERFACE

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"Try designing what can happen *in an interface instead of just dividing screen real estate into compartments."*

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Interface: the word suggests a site of between-ness, of negotiation or exchange across thresholds and boundaries. The image of a dashboard comes to mind, filled with controls, or alternatively, the membrane of a cell that selectively allows some substances to pass. Organic or not, these are both mechanical images of instrumental gateways. But an interface can also be understood as a dynamically complex system rather than a controlled boundary, a site of negotiation rather than an opening through which things move. In fact, the very idea of an interface as a site of transfer might be deceptive. Nothing passes, no tokens, no currency, or even language moves across an interface even though it may facilitate delivery of goods or services. The interface itself is a space that provokes events and performs constitutive acts. Like any image, text, performance, or stimulus, it is a provocation for interpretation and engagement. However, the diagrammatic aspect of interface is specific to the way its formal structure articulates such activity.

Transmission and delivery theories of communication have long been set aside in favor of process-oriented understandings in mainstream media studies. Even the most elaborately structured information and entertainment sites don't "deliver" content. They make an experience available for a viewer whose engagement with it constructs a cognitive-affective-sensory event. The interface is a crucial part of this experience, its structuring features enact constraints as well as possibilities. This structuring is embodied in diagrammatic forms that can express organized relations in any sensory modality: graphic, aural, motor-haptic, and/or vocal/sonic. These can be considered diagrammatic because they use organizational structure to articulate the *workings* of knowledge production, they don't just depict information or knowledge in reified form.

This distinction of diagrams as a subset of images is crucial. Many images do work of various kinds through provocation, faith, persuasion, seduction, and other interactions with viewers. But the schematic structure of diagrams (defined generically rather than within a strict semiotic typology), allows them to show *how things, systems, or processes work*. Medieval mystic Ramon Lull's diagrams, classical squares of opposition, or contemporary circuit diagrams serve as paradigmatic examples of diagrams understood as schematic models of working systems. The organization of relations among the diagrammatic elements – rather than pictorial associations or referents – provokes the interpretative events. The diagrammatic features embody specific semantic values: hierarchy, sequence, juxtaposition, proximity, direction, distance, rate of movement, growth and so on. These features are all structuring principles of diagrammatic forms. They embody specific epistemic features in a schematic, spatialized expression of information. The graphic organization of diagrammatic forms is meaningful in itself. While any image provokes interpretation, diagrams are distinct by virtue of how they use organizational relations

to articulate the workings of a system. Thinking of an interface in these terms calls attention to graphical structure as intellectual structure.

In the early days of digital interface, when the CD-ROM was the medium of dissemination of innovative works, there were no standard design conventions. You slipped a floppy disk into a slot, waited for the whirring sound to calm as the program mounted, and viewed the work on screen. Then – what? You poked around with your cursor, guided by the mouse, hoping some action would trigger a response. What cues guided the user in an environment without any standards? Menus, sidebars, links, and other organizing features did not exist, only a hotspot somewhere offered the user a guide to their actions.

Now the conventions that organize the graphical space of the GUI (or its variation, the Diagrammatic User Interface) discipline not only our behaviors but our conceptualization of interaction of what is possible. We enact mechanistic activities in interfaces every day, largely without thinking, through habitual actions. We click the buttons and follow links in a predictable manner, as if the interface were a vending machine for contents. We swipe, link, and consume. These habits ignore the interpretive complexity of the interface as a performative and constitutive space.

Switching the description of diagrams from one grounded in things that get reified in the process to one that is expressed in procedural terms suggests more than just a change from mechanistic to performative understanding, however. The process-based dynamic is premised on a notion of cognition that is constitutive and constructive, not simply reactive. True, not every moment of engagement with an interface – on screen, in a machine, a vehicle, or in the larger world of made structures and forms – produces self-conscious awareness of the hermeneutic dimensions of cognitive experience. That would be tedious and self-defeating. The habit of such reflection would soon dull the soul out of all meaningful response. But recognition of the made-ness of an interface as an encoded set of disciplining instructions whose programmatic features embed assumptions at every turn is fundamental to the understanding of the cognitive anthropology of interface, its operation as means of knowledge production.

Why does this depend on the concept of the interface as diagrammatic? Because diagrams are images that articulate the workings of systems – in this case, an interface with its features and functionalities – through spatialized organization and relations. Sketch an interface for a project, an application, or any kind of portal to an archive or collection. The first sketches are likely to be wireframes, the organizing scaffold, schematic and formal. Each area is discrete – masthead, menu, logo. Each function is also discrete – search, browse, link, purchase. The categories in the design are, deliberately or incidentally, actually expressions of a cosmology, a worldview structured into habits of thought. On the one hand, this is useful, efficient, and

functional. On the other it supports an unthinking, overly familiar, unexamined interaction. Contrast this with the moment of realization that the dashboard of your vehicle is literally speaking to you, not just in the voice of the automated GPS system or other assistants, but in the very ergonomic structure of address built into the distance between you and its displays. The dashboard is a mode of address, not merely a mode of display. Try designing what can *happen* in an interface instead of just dividing screen real estate into compartments. Conceptualize the dynamics of user actions and behaviors of the features as a conversation and imagine what is occurring within the workings of a performance.

This distinction between display and address is crucial to the concept of enunciation and to the way a diagrammatic interface articulates its subject. Linguist Émile Benveniste developed the concept to describe the reciprocity between "speaking" and "spoken" subjects in language acts and it has been extended to studies of cinema, space, and the visual arts.[1] In visual forms point of view systems, structured into graphics, model the profile of an imagined user. In an interface, the diagrammatic features inscribe this user in visual, linguistic, aural, and haptic domains that carry cultural and social implications structured into their features.

The apparently simplest, most banal interfaces of daily life are a vivid demonstration of these principles. Take, for instance, the interface for credit card payment at a check-out in the grocery or supermarket, or a ticket vending machine for the subway or underground. One enters immediately into a relationship with the device. The instructions on the device tell you when to act and what action to take. Your response to the instructions, rendered as direct address with an implied "you" at their core, is haptic and psychological. You direct your gaze, stuck on watching the LED display until it tells you to type a code, hit an "enter" button, and remove your card. You've been subject to a disciplinary regime, enunciated by the system through the interface. Even if no bell rings to signal that you have succeeded in your Pavlovian task, you get the psychic reward by being waved through the line. And the "you" who has performed in accordance with the rules of that very minor but none-the-less profoundly significant game is almost entirely reduced to an identity as a position, occupying the space outlined. Extend the analysis to the vending machine for tickets, with its more elaborate menu of destinations, times of day, demographic profiles, and other options each delimiting the "you" specified. "You" are "one-way, to Charing Cross, senior, and off-peak" – generic and specific at the same time. The interface has structured your identity as a place within a system, a penny rather than a pound. You didn't just get a ticket, you

1 Émile Benveniste, The nature of pronouns, in: *Problems in General Linguistics, translated by Elizabeth Meet* (Coral Gables, FL 1971), pp. 217–222; originally published in 1966 as *Problèmes de linguistique générale*.

were constituted as an identity as an outcome of an enunciative process.

Diagrams are graphical forms whose schematic, semantically meaningful, organization makes them particularly well-suited to express logical relations that are highly specific, but also may model generalizable systems that can be put to various purposes. The classical square of opposition is an example. Its structure is crucial to the meaning it produces. The positions of terms in its four corners determines their value and relations. But it can be used for an infinite number of arguments. While many (some might say all) images are provocations for engagement, for making cognitive or affective experience in a dynamic exchange, not all images model working systems – which is, again, the defining feature of diagrams. In addition, many diagrams are produced as non-representational images (in terms of visual similarity) – they come into being through a process of modelling, rather than through representing a pre-existing referent.

Diagrams provoke engagement through their structuring formats. The "diagrammatic" features are graphical, spatial, and relational. Diagrams are open forms. But while other images can also be interpreted with a wide range of meanings, diagrams articulate processes rather than meanings. Again, they show *how* things work, but they also articulate systems as working systems. Instead of deliberating over classification – "Is this or that a diagram?" – the description of diagrams shifts towards a procedural understanding – "How is this diagrammatic?" A diagrammatic format is a schematic articulation of working intellectual/cognitive, aesthetic/affective or behavioral systems.

Many diagrams suggest or even depict mechanistic systems, but (and again, this is true of the larger category of images of which diagrams are a part) they do their work through acts of enunciation. Enunciative modes are structuring, they are not exchanges between one actor and another. Instead, enunciation assumes that the actors are constituted through that exchange. I am a sister in a familial exchange and a friend in another. I do not come to the exchange with the role or identity intact, they are constituted in and constitutive of the exchange. My "sister-ness" is created in relation to certain expectations, conventions, norms of usage and utterance, tone of voice, familiarity with already extant conversational histories and shared experiences. All of this is evident in the specifics of the activity. The principles of the diagram are that it is premised on the co-constitutive process enacted by enunciation.

Why does this matter? Because as living creatures we are produced at and through the interface we have with each other and the world. This is a structuring process, not a mechanistic exchange. The critical approach used here is the basic premise of a constructivist approach to knowledge. The diagrammatic possibility allows for play, for the unfolding of existence between the potential of provocation and the habits of convention as a dynamic event.

Reference

Émile Benveniste, The nature of pronouns, in: *Problems in General Linguistics*, translated by Elizabeth Meet (Coral Gables, FL: University of Miami Press, 1971), pp. 217–222.