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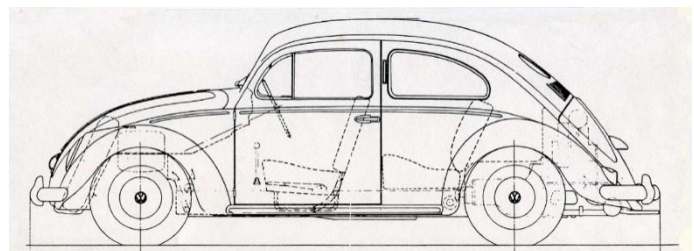
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Encapsulation

How do signs acquire their boundaries and their ‘identity’?

1. Introduction

Housings and enclosures can be examined on many levels. Technical devices need a housing that isolates the technology from the outside world and serves as the interface with their users; packages and containers protect goods during transport and, as the term implies, hold their contents together. Sheaths are housings for other things; sturdy on the outside and padded on the inside. And, of course, nature also has its capsules: Snails carry a shell on their backs that they have built themselves and into which they can retreat when trouble arises; beetles have an exoskeleton, and clams and turtles are armored like tanks; a logic that private transportation emulates when it sends people on the road encased in sheet metal.



My claim, then, is that phenomena of encapsulation also play a role at the *semiotic* level. If one does not simply take signs for granted, but asks how signs come into being in the first place, one will have to clarify how signs acquire their identity and their boundaries, what they enclose within themselves, and what separates them from their context.

Under normal circumstances, one would not ask this question. In the case of writing, for example, it seems self-evident that signs have boundaries. Highly standardized, self-contained, and identical to themselves, they stand in black against a white background. There are – in the phonetic alphabet – only 26 of them; everything else is repetition and combination. The whiteness of the background, the fact that there is a space between the characters, and a larger space between the words, seems to be inherent in the very concept of writing, and in that sense, again, taken for granted. In fact, however, these are *technical measures*; an artificial separation, like a ditch or a fence.

My suggestion is to set aside such taken-for-granted assumptions and, in a gesture of deliberate estrangement, to focus on those techniques that make a sign a sign in the first place – techniques that isolate it from its context and classify it among the group of capsules and casings.

2. Signs Without Boundaries

The question outlined here is less far-fetched than one might think. This becomes clear when one considers writing's older sibling, spoken language. Writing and speech are parallel manifestations of language as a system that provides the syntactic and semantic regularities that make linguistic utterances possible.

At the same time, however, spoken language has nothing – functionally or physically – that is comparable to the white spaces of writing. The stream of sounds produced by the voice is indeed articulated; the sounds differ, and consonants mark the boundaries of syllables; but physically, the stream of sound – unlike writing – is continuous. There are no pauses to mark the boundaries between words; moreover, the sounds are far less standardized than in writing; dialects and sociolects, acoustic issues, or a speaker's cold, cause the actual sound events to vary widely.

This raises the question of how listeners are even able to understand language and extract individual words from the sound continuum. And the answer is as simple as it is complicated. We don't actually understand the words of spoken language because we hear them, but because we *recognize* them. In essence, this means that it is the listener who structures the stream of sounds in spoken language. The listener himself punches out of the continuum of sounds what he then understands as 'units.'

In a sense, then, the listener takes on an active role. The listener *projects* an order onto the stream of sounds that this stream of sounds does not itself contain and that it – taken on its own – cannot guarantee. And such pattern recognition is highly dependent on prior knowledge. It requires that the listener already possess a sufficient number of distinct patterns, that this set of patterns be sufficiently compatible with those of other listeners/speakers, and that the listeners – even if they are not aware of it – be willing to undertake the effort of segmentation.

3. Other Media

The distinction outlined between writing and orality would be of little interest if it merely marked a boundary between these two modes of language. In fact, however, it touches on a question that concerns the entire media landscape – the question that I consider the most interesting from a media-theoretical perspective, and which nevertheless remains completely unresolved: the question of why there are different media at all.

Everything that has been said about the physically unstructured stream of sound that is the voice applies all the more to the world of *images*, and above all to photography and film. Technical images, photography and film, are not composed of distinct signs. They provide surfaces of continuous signifiers, surfaces that, while visually structured, by no means break down into a countable number of identifiable signs.

Images must therefore contradict the everyday understanding of the concept of a sign, which presupposes that signs can be named and distinguished as such and are part of a countable set of other signs. And it is precisely at this point – as one can reconstruct – that the great breakthrough of semiotics in the 1960s failed. Semiotics sought to be a comprehensive theory of signs. It claimed to describe the characteristics and functioning of signs with precision and to develop a conceptual framework for signs that – in principle – should be applicable to all media

Semiotics was more than aware of the problem of images. In the debate, a wide variety of proposals were put forward as to how it might be solved, but no concept could gain acceptance as even remotely plausible; and

Christian Metz's concluding observation – that visual media did not consist of individual signs but rather, from the very beginning, of “large syntagms”, that they were “*langage sans langue*,” that is, a form of expression without a system comparable to that of language – had to be seen as the final capitulation on this issue. Semiotics' lofty ambition to reduce all sign systems – including visual media, photography, and film – to a common concept of the sign had come crashing down.

And as far as I can see, despite another fifty years of semiotic debate and considerable theoretical effort, nothing substantial has changed in this situation. The contradiction remains: images are, of course, regarded as signifying (photographed dogs do not bite, and they ‘refer’ – however one defines that – to actual dogs in the actual world), yet the concept of the ‘sign’ in the realm of images remains counterintuitive. Images, as I have written elsewhere, had withstood the assault of dissecting reason and asserted their own logic against an entire discipline – semiotics.

4. Techniques of Separation

The question of whether signs have boundaries or must have boundaries is, therefore, relevant to media theory because it concerns the relationship of the various media to one another. And the preliminary assertion that there are two fundamentally different types of media – those *with* identifiable signs, and those that obviously function well even without them – cannot be in any way satisfactory, at least from a media-theoretical perspective, because it leaves completely unanswered, first, what the reason for this is, and second, more importantly, how one can conceive of the *relationship* between these two types of media.

Let us return to the techniques that ensure the separation of signs from one another. In the case of writing, these were the spaces that set the letters apart from one another, and the larger spaces that separate the words. This technique of separation seems unobtrusive because it uses the white of the paper, the ‘background’ of the material sign carrier. No separation is actively introduced, as would be the case with a fence or a ditch, but rather the separating element is precisely ‘nothing.’ And this nothing seems to have always been there; it seems to be the unspoken prerequisite for writing in the first place. ‘Positively,’ ontologically present, are the black characters of writing.



But maybe this assumption is wrong. Breaks, too – another form of nothingness – are, in fact, “taken”; in German, the matter is even clearer: there, breaks/pauses are “made.” This suggests that perhaps both signs and empty spaces/pauses have the same ontological status. In the realm of the digital, this is evident anyway. Zero and one have exactly the same rank, at least semiotically, even if this is different on a technical level (the charging or non-charging of a memory cell, the presence or absence of an electric voltage at a specific point in time).

And perhaps the reference to the break being “taken” leads in the wrong direction anyway. The concept presupposes that someone can be identified as the agent of the action; and, more generally, it presupposes a *top-down* logic of origin. But even in the case of writing, it cannot be assumed that it had a single, original creator. It is far more likely that it developed on its own – namely, from the *bottom up*, over the course of a very long time and within a widely ramified network of practices.

This, in turn, changes the concept of technology. If one assumes that the techniques of separation, too, have emerged and *developed*, then entirely different causes and logics of origin may come into focus. So how, that was the question, could spatially limited, mutually separate, self-identical signs have come into being?

5. Techniques of Separation 2: Encapsulation as an Emergent Process

Let us once again start not from the constituted signs but from their opposite pole, the ‘amorphous’ semiotic material of photographic images and moving images. When viewed as a whole, the universe of images is almost infinitely diverse. There is an incalculably large number of photographs; and no two of these images are exactly alike (apart from technical reproductions, copies, and prints from the same negative).

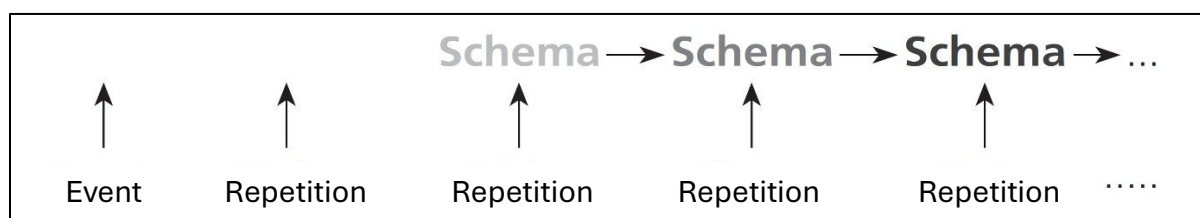
However, once one has seen a great many photographs, certain structures become clearly apparent: Most photos show some kind of object in the center. Many photographs show people who are cropped off at chest level. Many photographs are green at the bottom and blue at the top. And a certain proportion of at least the vacation photos – a persistent visual cliché – are photographed through an archway.

The fact that a structure exists at all cannot be seen in any single image. It is only when viewed in the mass of images, through *repetition*, that the similarities catch the eye. Therefore, an entity is needed that is capable of registering this repetition – either over a long period of time (take human memory for example), or by collecting the material and placing it side by side for simultaneous comparison.

But what does it mean for ‘structures’ to emerge? Gestalt theory and schema theory have shown that *everything* we see can be traced back to the described mechanism of repetition: the fact that we can recognize objects at all and distinguish figure from background, every object contour, the ability to identify people and faces as such, and so on – all of this is *learned* through a long chain of perceptual acts. Specifically, this means that, at least for a baby, figure and ground initially blend together completely. Only as development progresses do figures become distinct from the ground, and does perception begin to isolate ‘objects.’ The visual clichés mentioned above are thus merely a special case of a more general rule.



The separation of figure and ground gives us a sense that, at least in the realm of visual perception, the boundaries of objects are not simply given. Rather, objects *are assigned* boundaries. As they assert themselves against different contexts, they gradually emerge from the ground.



And of course, it is not actually the ‘objects’ themselves that are given boundaries here. Rather, what Gestalt and schema theory describe is a *perceptual mechanism* that produces objects as *schemata of perception*. So if it was stated above that the perceiver projects schemata/patterns onto the stream of perceptions, and if it was assumed that the perceiver must always already possess these patterns in order to be able to perceive at all, what will now be described is how these perceptual schemata emerge and how the perceiver acquires his repertoire of patterns.

6. Repetition

Let us now turn to repetition. If repetition is central to the formation of patterns of perception, it is worth discussing a few of its peculiarities before conclusions can be drawn regarding the formation of the *sign* as well.

Repetition is an extremely robust mechanism; it by no means requires that what is repeated be identical – it need only be sufficiently *similar*. Different from the rest of the material, yet similar in some respect.

And it goes even further; for similarity itself is more than robust. Thus, it can initially remain entirely open *in what respect* similarity exists; the criterion for similarity itself is emergent – it only emerges within the material, in repetition, and in comparison. Thus, a stone and a rabbit – despite all their obvious differences – can both be ‘gray’; and the pattern ‘gray’ will only emerge when it detaches itself, step by step, from all concretely gray things, from stones and rabbits.

Furthermore, the *degree* of similarity can vary freely. A high degree of similarity borders on identity, while a very low degree of similarity risks being lost in a sea of differences or will require many more ‘instantiations’ to emerge as such. So if ‘sufficient similarity’ was required above, what constitutes ‘sufficient’ is by no means fixed. And finally – in a completely paradoxical way – it is the occurrence of repetition and similarity that determines what constitutes an instance, a case of repetition, in the first place. This line of reasoning may seem recursive and confusing, but at the same time it is irrefutable: Because in most cases one cannot identify an ‘archetype’ or a pre-established pattern as a starting point, what ‘counts’ as a case of repetition can be determined exclusively by the repetition itself and depends entirely on it.

7. Machine

Similarity, repetition, and the emergence of structure/objects/schemas are thus (at least from the perspective of perception) systematically interconnected. And in the concept of repetition based on similarity, the contours of a rather unique machine begin to emerge.

This machine is unique in terms of its scope; from visual perception (Gestalt formation) to stereotype theory, from the early childhood constitution of first (visual or auditory) objects to the elaborate discourse of audiovisual media; and from the level of content (the level at which perception recognizes ‘objects’) to that of formal design, insofar as the means of formal design are also subject to a process of conventionalization and are only recognized as ‘forms’ with the development of media literacy.

And secondly, it is unique because it is a ‘*soft*’ machine. It is distributed across an infinite multitude of actants and events that, with no beginning or end, span unimaginably long periods of time; bound to the soft, gray hardware in our minds, which is notoriously difficult to analyze; and to the complex interaction between these minds and what can be perceived externally. *As a machine*, as a social dispositif, it can only be described in a theoretical model and only in broad terms.

The particular achievement of this machine, however, is clear: It is a machine of extraction. What would be nothing but a crackling chaos as the raw material of perception (which is why babies need to sleep so much), it processes into small, brain-friendly morsels. And step by step, it equips the brain with a protective shield that parries the stream of perceptions by actively countering it with a set of schemas.

The second achievement consists in a detachment from the concrete. What is repeated is by no means the concrete itself; rather, it is something that connects the instances of repetition – through similarity. As soon as one speaks of schemata, this detachment is always implied; schemata are more abstract than what they schematize; and the aforementioned mechanism is the basic engine of abstraction.

The third achievement is crucial to the argument pursued here. As the schema detaches itself from the concrete, the schema itself takes shape and acquires qualities that otherwise only objects possess. Schemas, in a certain sense, become objects (or ‘things’) themselves. They acquire boundaries, form, and contour.

8. Signs

Let us now return to my original question, namely that of signs and their encapsulating nature. At first glance, signs seem to me to be a simple application of the mechanism just described. If perceptions generally solidify into schemata that have the potential to act as an organizing force for future perceptions, then one can conceive of the emergence of signs in this or a similar way. A path that leads from the non-sign (the individual, concrete perception) to the sign, insofar as one understands the sign itself as a schema of perception.

Signs *are* schemata; this becomes clear, for example, when one considers mechanisms of stereotyping: When, for the first time in the history of film, a calendar was flipped through to suggest the passage of a longer period of time, it was an original aesthetic solution. Now, having been repeated hundreds or thousands of times, it has become a visual cliché – not to say a sign. In such cases (which are rarely so clearly identifiable), one can illustrate the genesis of stereotypes quite vividly, as a process that leads from the never-before-seen individual event, via repetition and consolidation, to the pictorial sign. And at the same time, the end result – the constituted sign – is a privileged special case. Signs are emblems that mark not the process itself, but the end of the process, the triumph of consolidation. In a certain sense, signs celebrate abstraction. Detached from the concrete, they affix a label to things that were once concrete. The signs themselves become objects and, as if they had always been so, enter the circulation of (sign-) objects.

9. Encapsulation, Rounding Out the Form

Encapsulation of the sign, then, occurs on various levels. On the one hand, in the solidification of the sign itself – in its solidification *into* a sign. If the notion of ‘solidification’ captures the process of repetition and the emergence of form in a metaphorically plausible way, then the result is a capsule. Whatever this capsule contains, it must – as a strategy of isolation and boundary-drawing – arm itself against its context.

Is it any wonder, then, that signs – constituted signs – also tend toward isolation, rounding off, or conciseness when it comes to their external form or design? The white space that surrounds the signs of writing has been *cleared out* (spoken language knows no such spaces). It is the result of the hardening itself, and is due to the sign’s transformation into an object.

10. Rounding Out the Content

But what does the capsule contain? What is the content of the sign? Can a ‘rounding out’ also be demonstrated at this second level? If we once again assume the mechanism of schema formation which extracts schemas via repetition/similarity, and if the schema/sign gains its identity by increasingly detaching itself from its respective concrete contexts, then the sign must have a dual relationship to its context:

As Bühler puts it, the sign enters every given context as an ‘alien.’ As a constituted sign, it always brings its conventionalized meaning with it. One could say that the sign isolates itself; it is aggressive toward its context and entrenches itself. And at the same time, it is aggressive toward the context precisely because it owes its existence entirely to it – not to the current context, but to the contexts of the past, from which it has gradually detached itself and against which it has hardened itself. From every context in which it appeared, the sign has drawn something to itself and carried it away; the contexts of the past have ‘informed’ the sign. And if it now appears ‘full’ and self-sufficient, it is only because this history is no longer perceptible in the sign itself, because the sign appears as a product that renders its connection to the history of its uses unrecognizable.

11. Typification

And finally, the aspect of typification. If signs are doubly bound to typification – insofar as they emerge from processes of typification and are simultaneously a *means* of typification, because they encounter the concrete in each instance as a type, a part of an organizational grid – then this, too, constitutes a form of encapsulation. Signs can only organize the world because they are *more simply structured* and less complex than the world itself. In this, they are similar to the compartments of a filing cabinet. (And that is precisely why schemas, schematism, and schematization, thinking in terms of compartments and, often, stereotypes, have a pejorative connotation). When open, capsules have sharp edges: typification implies that schemata cut off something from the concrete. Typification and order, as Adorno demonstrates in his ‘Negative Dialectics’ using the example of language, have an aspect of violence.

12. Conclusion

What I have outlined here cannot do without metaphors; this becomes clear in the talk of ‘hardening’ or ‘encapsulation’; and when it was said that the sign owes its existence to a ‘mechanism’ of repetition, this itself is, in a certain sense, mechanical, schematic, and model-like in its abstraction.

But what the model-like conception is supposed to achieve is exactly the opposite. My aim is to make the semiotic question more *dynamic*. Precisely because the sign appears to be already constituted, I want to show that the process is more important and more interesting than the product; and this is all the more true since the product systematically conceals the process to which it owes its existence.

Constituted signs are a special case; a crystallization, a reification, a product of semiotic practices. Once objectified as things, however, they gain authority; they stand opposite the practices as if they were the self-evident standard by which the practices are measured. Objectively stable like things, and at the same time ‘ideal,’ because they are highly typified and, as individual instances – always merely an instantiation of the type – they combine materialism and metaphysics. However, informed by a critical perspective on signs and media, we will harbor doubts about such syntheses. This is yet another reason why a Semiotics 2.0 should focus not on the constituted sign, but on schema formation and conventionalization – that is, on how signs become signs.