

Dispositional properties of the objects

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Abstract :

This paper offers a set of works in progress which aims at understanding the ambiguous status of the concept of function in design semiotics. More precisely, here, I try to find out whether and how it is conceivable to confer any ontological consistence to the alleged powers of design objects. First, I bring out the theoretical stakes implied by such research as far as the greimasian semiotics context is concerned ; and secondly, I examine several philosophical and scientific viewpoints regarding the status of dispositional properties of objects (from Goodman’s reductionism to Popper’s dispositionalism).

Keywords : function – power – dispositions – properties – objects – modalities – modes of existence.

1. To make a semiotician and a designer work together, they have to share the same “world”. As the first one just describes the semiotic forms while the other one creates objects “in substance”, they have to agree on a common ontology. Yet, from this consideration, the *differential principle* which is the basis of the greimasian semiotics constitutes one of the limits of the structural paradigm. And, due to its own foundation, the latter forbids to consider design objects by themselves (or in substance¹). In a paper dedicated to the links between semiotics and ontology, J Fontanille (2004b) explained that semiotics has long rested on an approach to meaning such as “semblance”. However, if it is true that when you keep at a distance all kind of dependence towards reality, this approach to meaning allowed to guarantee a satisfying semiotic existence to its objects for the research. It represents a combination of problems which charges the semiotician today to call it into question. For our concern here, the most important problem is that

1. Very recently, the project to integrate semiotics with the creative process of meaning objects received a strong theoretical support through Fontanille’s work. Traditionally, semiotics was considered to be an exclusively descriptive discipline. However, by closely examining his definition, we can see that semiotic description itself participates to the creation : so description is simply translation. Arguing the contrary would reduce the description to simple repetition. Thus, the heuristic power of semiotics is demonstrated and testified to the efficiency of semiotics as regards creation, with remaining conservative : the activity of the semiotician cannot reach beyond the limits which semiotic forms impose (the semiotician is not a creator “in substance”).

of the expansion of the semiotic researches field to other semiotic-objects, texts or images. This problem leads us to reconsider the kind of various semiotic modes of existence. Therefore, if it may have been relevant to recognise “objects in paper¹” mentioned in texts as real, the fact to take into account the objects of the aforementioned physical world (including artefacts) resorts to new kinds of “semiotic existence”.

From the moment that the field of research of the discipline [...] isn't limited to the semiotic-objects built and determined either in texts or images, this approach (to meaning as semblance) is henceforth hardly possible to keep-to stand. The meaningful processes inherent to a design object or to a social practice can include the production of semblance but can't be reduced to that. A general semiotic can't be represented as a production of semblance anymore, and has to face the ontological dimension of meanings it conveys with an open mind. (Fontanille, 2004 : 2)

These remarks are determining to understand what is at stake concerning the semiotic of objects ; the objects are not only defined as a level of relevance whose efficiency on the general semiotic principles is “revolutionary” ; yet, the expansion of the semiotic researches field to the semiotic-objects whose narrative dimension is not anymore essential but fortuitous, leads to make the conception of meaning as semblance a particular case and then, and to see in a new light the question of the existence of objects as well as of their properties. As far as semiotic is concerned, the whole stake consists in understanding the way the experience of the world represents itself into an expression plane. On a working hypothesis basis, contemporary semioticians² gave several suggestions without the opportunity to precisely establish the degree of their compatibility neither their operativity concerning the very precise question of technical objects nor design objects.

2. Added to the epistemology of semiotic-researches problem, we have to take into account that of the definition of the design object, which is far from being a broad consensus. We will suggest here, a non semiotic definition in principle concerning the concept of object which is likely to establish the temporary consensus necessary to start the study. Thus, the ordinary material objects stemmed from the ordinary conception process called design or industrial design will be considered³. Yet, not to reduce the semiotic-objects to a plastic semiotic or to aesthetics – only centered on objects of contempla-

1. In the first version, the semiotic modes of existence justify themselves through the junction predicates within the programming of the simulated action. Thus, to Greimas' opinion for example, the object is said to be virtual when it is considered to its junction to a subject, the junction serves as a function of actualisation. Return to the dictionary of semiotics and see the expression : “semiotic existence” : “The problem of the mode of existence is raised [...] about the narrative discourses which are supposed to describe real situations and actions. Acknowledging that it is about semblances of actions and subjects in paper participate. [...] The analysis requires their being treated as if they were real. The junction is the only condition necessary to the existence of subjects, just like that of the objects. (Greimas & Courtés, 1979 : 138-139), see : “semiotic existence”).

2. Such as Bordron (1998, 2004) and Fontanille (2004b).

3. See Vihma, 1995.

tion (or objects of Art¹), we will consider that an object can be seen as a design object when it is destined for itself only. The *transitivity* or *protensity criterion* (maybe temporary) will be the foundation of the semiotic-objects the way we will first define it². From that point, the word “object” will mean a stable formed material artefact endowed with two or three dimensions, and more particularly with an intentional direction (or transitivity direction). This definition could be certainly discussed at length. But here, it’s crucial not to take a definitive stand but to grant a consistent entrance to start the research. The main idea is that all the other dimensions of the object are interdependent of the transitive dimension and depend on it.

As regards design, when transitivity is taken into account, it roughly squares with the functional dimension of objects (temporarily reduced to the rank of simple tools or instruments, or even technical objects). Yet, even if the concept of function turns to be often evoked, it still remains a semiotic riddle. What does function really mean ? What do we have to understand when we state that such an object naturally allows this or that ? We simply give a certain power to the object. However, the concept itself of power is equivocal : it requires to consider the object according to a very special mode of existence. Indeed, the field of functional objects is a sphere in which the observable (or actual) part of the object is a minority. The distinguishing feature of the functional objects (as tools or instruments) which virtualise the practice, consists in considering processes in a different angle than that of “actuality”. The objects recognised as functional are first considered as potentials, such as some virtualities or powers. Paying particular attention to the necessity for contemporary semiotic to free itself from the conception of meaning as semblance, we have explained above how the experience of the world constitutes itself in an expression plane. Precisely, as regards the semiotic of design objects, this project can start with an ontology of functions and technics, defined as powers.

Within the scope of the semiotics of semblances (i.e. texts, images and movies), the question about power can clearly be considered : power (like all the other modalities) is part of the observables of the discourse and it obviously exercises its reaction constraints according to descriptive utterances. However, ever since we consider objects (said to be part of the physical world even if they are artefacts) and not anymore semblances, the question of power has to be raised slightly differently. And then, from that point, what appeared to be obvious, becomes less significant, all the more so as modern ontology and epistemology relegated the notion of power to the position of metaphysical entities, occult qualities and other “virtues” (properties), relics of Aristotelian finalism. However, as we wanted to mention it to understand the semiotic stakes of technical objects (endowed with functional vocation), we are obliged to apprehend objects according to another mode of existence totally different from the realised or actualised mode.

1. See Monjou, 2008.

2. Here, we join to Barthes, 1964 : 250 : « il y a spontanément sentie par nous, une sorte de *transitivité* de l’objet : l’objet sert à l’homme à agir sur le monde, à modifier le monde ; à être dans le monde d’une façon active ; l’objet est une sorte de médiateur entre l’action et l’homme. On pourrait faire remarquer d’ailleurs qu’il n’y a pour ainsi dire jamais un objet pour rien ». Read also : J. Fontanille, 2003b : 62).

In other words, we are forced to postulate a certain depth of objects which recognizes a set of dispositions to action (without considering them as magical objects).

3. It is interesting to notice that the question about dispositions has come out again, for some years, in the scientific field for reasons that deeply touch the semioticians' concerns. In order to understand what kind of entity can square with dispositions, we suggest to present here a short overview of these researches¹. The level of abstraction and of generality doesn't necessarily intend to an exploitation in the design area, but presents numerous interests to tackle semiotic problems linked to artefacts which are design objects. Mumford confirmed this particular point in 1998. After the first pages of his work dedicated to dispositions, he chose the example of artefacts :

“The essence of many artefacts is dispositional. Thermostats, thermometers, axes, spoons, and batteries have dispositional essences. What it is that makes certain artefacts the thing they are is that they have particular set of dispositions. [...] What is the right sort of disposition for a thermostat ? Roughly, for something to be a thermostat it must be sensitive to changes in temperature and to able to trigger a switch if a pre-calibrated temperature threshold is crossed. Anything which has this disposition, if I am analysing the concept correctly, is a thermostat regardless of the constitution that affords such an ability. [...] Need all dispositions be supported by a mechanism ? Do mechanism cause dispositions, constitute them, or is some other relation involved ? Can we say that the disposition and mechanism are two distinct qualities and does this mean that the world is populated by two different types of property ?” (Mumford, 1998 : 8- 9)

Obviously, among those such as Mumford who recognize a sort of interest regarding dispositions (for the question which is raised), all philosophers of sciences and scientists don't agree with their mode of existence, or with their reality. Thus, three positions can roughly appear : i) the reductionist position (N. Goodman), ii) the categoriclist position (D.A. Armstrong) and iii) the dispositionalist position (K. Popper).

3.1. Reductionism. – Nelson Goodman tried to show the urgency and the necessity to seriously consider the problem of dispositions for the philosophy of sciences (Goodman, 1955 : 44). Nevertheless, for him, the problem of dispositions is not so the concern of ontology compared to that of semantics. In other words, Goodman doesn't think that dispositional properties exist in the literal sense ; to acknowledge the existence of dispositional properties in objects would come down to bring back into favour the mysterious modality of the possible, the modality that the analytic tradition (under Carnap's impulse) endeavours to reduce.

« Besides the observable properties it exhibits and the actual processes it undergoes, a thing is full of threats and promisses. The dispositions or capacities of a thing – its flexibility, its inflammability, its solubility – are no less important to us than its other behaviour, but they

1. Our ambition is not to proceed to an exhaustive examination of the question, but to briefly expose what is at stake and the interests it presents for the semiotic of objects. To get a complete view, the reader has to return to the bibliography.

strike us by comparison as rather ethereal. And so we are moved to inquire whether we can bring them down to earth ; whether, that is, we can explain disposition-terms without any reference to occult powers. » (Goodman, 1955 : 40)

As Gibson will later do within the context of his theory of affordances, Goodman acknowledges that, for us, an object's observable properties do not exhaust the object's meaning, since all objects present a certain depth which surpasses its current presence ; dispositions thus constitute another mode of existence for objects. However, despite their importance to us, Goodman returns these dispositions to the darkness of "ethereal" powers of old metaphysics, thus depriving them of all ontological reality.

Beyond making them carefully and declaring them loudly, about all that we can do is to disparage any alternatives. If your conscience is more liberal than mine, I shall call some of your explanations obscure or metaphysical, while you will dismiss some of my problems as trivial or quixotic. [...] Some of the things that seem acceptable to me without explanations are powers or dispositions, counterfactual assertions, entities or experiences that are possible but not actual, neutrinos, angels, devils and classes. (Goodman, 1955 : 32-33)

3.2. Categoricalism. – According to the Australian philosopher David M. Armstrong, far from being independent properties, dispositions depend on basic or categorical properties (non-dispositional). In other terms, as far as the "categoricalist" school is concerned, dispositions (such as "to be fragile", "to be flexible", "to be sharp" etc.) are indeed properties of objects (those which interest either the physicist or the engineer). Thus, when we apply a dispositional predicate to an object (i.e. "flexible back rest of a chair"), this predicate necessarily depends on a non-dispositional basis. Therefore, according to Armstrong, it is its non-dispositional basis which constitutes the reality of the disposition (which we are then tempted to call – and rightfully so – a "dispositional property"). (Armstrong, 1968 : 86)

« to speak of an object's having a dispositional property entails that the object is in some non-dispositional state or that it is in a non dispositional state ». (Armstrong, 1968 : 86)

So, if a glass is fragile or a knife is sharp, it is because the molecular structure of these objects differs from that of sturdy glasses and dull knives. However, the contradiction in Armstrong's hypothesis is the following : only categorical properties are real and potentialities do not exist in a literal sense. The idea of scalar gradation between actual and non-actual (which would include several modes of existence, as greimassian semiotic theory suggests) is therefore unknown to Armstrong. It is an ontological monism which does not allow an intermediary term between the being and the non-being, which permits his theory to be called "categoricalism"¹.

« it seems that it is impossible that the world should contain anything over and above what is actual. For there is no mean between existence and non-existence » (Armstrong : 1969, 24, see Mumford, 1998 : 174)

1. See also Armstrong (1997, chap. 5 : 69-84, 69 and 80.) : « all true properties [...] are non-dispositional » (Armstrong, 1997 : 80).

3.3. Dispositionalism. – The affirmation of the reality of dispositional properties appears in its most open and radical (and also perhaps its most problematic) form in the theory called “dispositionalism” promoted by Karl Popper and D.H Mellor¹. According to the theory of dispositionalism, nearly all object properties are dispositional. So, the first corollary of this theoretical position is the disappearance *ipso facto* of all relevant distinction between dispositional properties and properties which are considered categorical (or basic properties), as Armstrong believed. The second corollary of dispositionalist theory (a reformulation of the first one) is that the predicates which usually designate non-dispositional properties (or categorical properties) become dispositional predicates and always refer to dispositional properties. This radical and undoubtedly counter-intuitive argument may seem surprising, because it is likely to put into question reality as we know it, by propelling it into a sort of generalised *virtuality*. By analysing the physical nature of objects, Popper explains that intuitively, we consider to be constitutive of the categorical basis of objects their physical or spatio-temporal structure (the structure which physics and mechanics study). Whether an object is hard, large, endowed with a stable form, it resists penetration or being moved (etc.), are qualities that we perceive as constituting that object’s fundamental or categorical properties. However, after further consideration, mass, resistance and other qualities are only conceivable in relation to their dynamic *efficiency*. For example, in physics, an electron can only be defined in relation to its efficiency or relative to its “capacities” or “dispositions” to act in an efficient manner ; in other words, in relation to its “propensities”. What an electron does defines its nature and describes its essence. So, physics proceeds as follows : beginning with macroscopic dispositional properties such as hardness, elasticity, fragility, or malleability, etc., it looks for the underlying bases of these properties (such as length, volume, pressure, electrical charge, etc.) ; but indeed, what physics truly seeks to explain is the ability of the objects being studied to react or to be affected in a certain way. Finally, the goal is not to distinguish between dispositional and categorical properties, but rather to distinguish between dispositions and *pseudo* (or false) dispositions. Thus, according to Popper, dispositional properties define the nature of objects in such a way that the entire universe must be seen as a universe of propensities.

« This view of propensities allows us to see in a new light the processes that constitute our world : the world process. The world is no longer a causal machine – it can now be seen as a world of propensities, as an unfolding process realizing possibilities and of unfolding new possibilities. » (Popper, 1990 : 18-19)

1. For a complete presentation, read Armstrong : 1997 : 75 and f.

Conclusion

Whatever its complexity and its degree of indecision, the contemporary thought about the question of dispositions allows us to approach a group of questions in a new light. And the semiotic of design objects can't ignore it : what type of coherence the numerous dimensions have with each other to present a unified object ? How to understand the levels of dependence that the technical, technological, plastic and ergonomical components have within the object ? And then, how to make the various abilities collaborate since they intervene in the processes of the conception of objects (e.g. : design, engineering, semiotics, ergonomics, etc.), considering the fact that each of them is in charge of particular types of properties ?

More than in any other semiotic field, the question of properties appears to be essential to understand the objects and their functions. Obviously, no one is obliged to subscribe to a "pan-dispositionalism", like the one which Popper proposes. Indeed, numerous objections have been formulated against the propensitist theory which displays several difficulties¹. As U. Place mentioned (Place, 1996 : 92-120), one of the problematic consequences of the propensitist theory consists in universally spreading the intentionality, a notion that Brentano and Husserl developed to define the feature of *mind*). Indeed, when you state that the objects of the physical world (artefacts included) are dispositions or "powers", it is as if you could see intentionality everywhere. But eventually, this extension should not be surprising for semioticians ; J.J. Gibson's propositions were the same in 1977-1979; Gibson said :

« Actually, an affordance is neither an objective property nor a subjective property ; or it is both if you like. An affordance cuts across the dichotomy of subjective-objective and helps us to understand its inadequacy. It is equally a fact of the environment and a fact of behavior. It is both physical and psychical, yet neither. » (Gibson, 1979 : 129)

Sceptics who don't believe in the relevance of an "ecology of properties" could stick to Ryle's opinion. According to Ryle, the dispositions of objects depend on the "contingent" laws of nature, not on the properties of the objects themselves. Thus, we can wonder what are these laws which rule the dispositions of design objects ? Keeping in mind that these objects are first and foremost *cultural* rather than *natural*, one response could be found by the concept of *situations* as level of semiotic relevance, situations present in the field of culture like so many "semiotic worlds".

1. For a detailed study of possible objections to the propensitist theory, cf Mumford 1998 or Armstrong 1996. Notably, the theory of propensities presents certain risks concerning the application of the notion of truth (reality ?). Then, as Armstrong demonstrates, in the event that the so-called disposition does not manifest, we are forced to admit that the object still contains within itself a hint of the manifestation that did not occur (Armstrong).

References :

- ARMSTRONG, D.M. (1997) : *A World of States of Affairs*, Cambridge, Cambridge University Press.
- ARMSTRONG, D.M. (1968) : *A Materialist Theory of the Mind*, Londres, Routledge & Kegan Paul.
- ARMSTRONG, D.M. (1969) : « Dispositions are Causes », *Analysis* 30, 23-6.
- BARTHES R. (1964) : « Sémantique de l'objet », *L'Aventure sémiologique*, Paris, Seuil, 1985 p. 249-258.
- BORDRON J.-F. (1991) : « Les objets en parties. (Esquisse d'ontologie matérielle) », in Coquet J.-C., Petitot J., 1991 (dir.), *Langages* n°103, p. 51-65.
- BORDRON J.-F. (1998) : « Réflexions sur la genèse esthétique du sens », *Protée*, vol. 26/2, 1998, 97-104.
- BORDRON J.-F. (2004) : « Transversalité du sens et sémiologie discursive », in Alonso, Juan, Denis Bertrand, Michel Costantini & Sylvain Dambrine, *La transversalité du sens : parcours sémiotiques*, Saint-Denis, Presses Universitaires de Vincennes, 2006, coll.: essais et savoirs, pp.101-120.
- DENI M. (1999a) : « Les objets factitifs », dans Fontanille J. et Zinna A. : *Les objets au quotidien*, Limoges, Pulim, 2004 (dir.), p. 79-96.
- DENI M. (1999b) (dir.) : *Per una semiotica degli oggetti, la dimensione fattiva* (Thèse de doctorat sous la direction de U. Eco et Ugo Volli), Università di Bologna.
- DENI M. (2002a) (dir.) : *La semiotica degli oggetti, VS – Versus. Quaderni di studi semiotici*, 91/92, Milano, Bompiani.
- DENI M. (2002b) : *Oggetti in azione. Semiotica degli oggetti : dalla teoria all'analisi*, Milano, Franco Angeli.
- FONTANILLE (1998) : *Sémiotique du discours*, Limoges, Pulim.
- FONTANILLE (2003a) : *Sémiotique du discours*, Limoges, Pulim.
- FONTANILLE J. (2003b), « Sémiotique des objets », dans Deni M. (2002) (dir.), p. 61-86.
- FONTANILLE J. (2004a), « Discours, objets, situations et formes de vie. Les niveaux de pertinence de la sémiotique des cultures », in *Les objets au quotidien*, Pulim, 2005.
- FONTANILLE (2004b) : « Sémiotique & ontologie : l'expérience et l'existence », Conférence prononcée le 7 juillet 2004 à Lyon, lors du 8e Congrès de l'AIS, to be published.
- GIBSON J.J. (1979) : *The Ecological Approach to Visual Perception*, Houghton Mifflin, Boston.
- GOODMAN N. (1955) : *Fact, Fiction and Forecast*, Indianapolis, Bobbs-Merrill Co.
- GREIMAS, A. J. (1966) : *Structural Semantics : An Attempt at a Method*, trans. Daniele McDowell, Ronald Schleifer and Alan Velie, Lincoln, Nebraska: University of Nebraska Press, 1983.
- GREIMAS, A. J. and J. COURTÈS (1979)* : *Sémiotique. Dictionnaire raisonné de la théorie du langage*, Paris, Hachette, 1979. English translation : *Semiotics and Language : An Analytical Dictionary*, Bloomington : Indiana University Press, 1982. (Hardcover, Indiana Univ Pr. 1983.) *Quotations refer to original edition of the dictionary but precise the entry.
- GREIMAS, A. J., (1970) : *On Meaning*, trans. Frank Collins and Paul Perron, Minneapolis: University of Minnesota Press, 1987.
- GREIMAS, A.J. and FONTANILLE J. (1991) : *The Semiotics of Passions. From States of Affairs to States of Feelings*, trans. Paul Perron and Frank Collins, Minneapolis : University of Minnesota Press, 1993.
- HJELMSLEV, L. (1943) : *Prolegomena to a Theory of Language*, trans. F. Whitfield, Madison: University of Wisconsin Press, 1963.

- MACKIE, John (1973) : *Truth, Probability and Paradox*, Oxford, Oxford University Press.
- MELLOR, D.H. (1974) : « In Defense of Dispositions », *The Philosophical Review*, 83, 157-181.
- MELLOR, D.H. (2000) : « The Semantics and Ontology of Dispositions », *Mind*, vol.109, 436, october, 757-779.
- MONJOU M. (2008) : « Pour un fonctionnalisme méthodologique en sémiotique des objets » in Hebert L. et Guillemette L. (dir.) : *Performances et objets culturels*, Québec, Presses de l'Université Laval, coll. «Vie des signes», to be published.
- MUMFORD, Stephen (1998) : *Dispositions*, Oxford, Clarendon Press, Oxford.
- PLACE, U.T. (1996) : « Intentionality as the mark of the dispositional », *Dialectica* 50, fasc.2, 91-120.
- POPPER, Karl (1990) : *A World of Propensities*, Bristol, Thoemes Press.
- RYLE, Gilbert (1949) : *The Concept of Mind*, Londres, Hutchinson.
- SAUSSURE, F. de (1916) : *Course in General Linguistics*, trans. W. Baskin, New York: Philosophical Library, 1959.
- VIHMA S. (1995) : *Products as representations. A semiotic and aesthetic study of design products*, University of art and design Helsinki UIAH, Helsinki.