

## **Dialogic gradation in the logic of interpretation: deduction, induction, abductions**

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### **Semiosis and dialogue**

A complete catalogue of elements postulated for semiosis is listed in the article entitled 'Model of semiosis' by Martin Krampen (1997: 248). This list includes the following 14 elements deemed necessary for a complete description of semiosis. Elements designated by a letter in parenthesis are located within the organism of the interpreter:

- 1) the semiosis as a whole: Z;
- 2) the organism of the interpreter: (O);
- 3) the interpretandum ('signal'): S;
- 4) the channel: Ch;
- 5) the signifier (the signal represented in the organism): (Rs);
- 6) the interpretant: (I);
- 7) the signified (the object represented in the organism): (Rg);
- 8) the interpretatum ('objet'): G;
- 9) the disposition for instrumental behavior: (Rbg);
- 10) the disposition for signaling behavior: (Rsg);
- 11) instrumental behavior: (BG);
- 12) signaling behavior: (SG);
- 13) external context: (C);
- 14) internal context: (c).

On the basis of this list, a semiosis can be described in the following way:

A semiosis  $Z$  is a process involving a channel  $Ch$  with an interpretandum  $S$ , which is related to an interpretandum  $G$  by being perceived and represented as a signifier ( $Rs$ ) within the Organism ( $O$ ) of its interpreter; the signifier ( $Rs$ ) then being mediated by an interpretant ( $I$ ) to connect with the signified ( $Rg$ ), which represents the interpretatum  $G$  within ( $O$ ). Via the interpretant ( $I$ ), this process of symbolizing and referring triggers dispositions for instrumental behavior ( $rbg$ ) and/or signaling behavior ( $Rsg$ ); these are both related to the interpretatum  $G$  and terminate, via appropriate effectors, in overt instrumental behavior  $BG$  or signaling behavior  $SG$ , the latter supplying interpretanda for a further process of interpretation. Each semiosis  $Z$  is surrounded by other semioses and takes place in a context  $C$  external to ( $O$ ) as well as a context ( $c$ ) internal to ( $O$ ). (Krampen 1997: 321)

This complex definition of semiosis is centered around the notion of interpretant. In fact, as we have already stated, the interpretant mediates between solicitation (interpretandum) and response (signaling behavior or instrumental behavior). In Peirce's view such mediation distinguishes a semiosis from a mere dynamical action — ‘or action of brute force’ — which takes place between the terms forming a pair: on the contrary, semiosis results from a triadic relation: it ‘is an action, or influence, which is, or involves, a cooperation of three subjects, such as a sign, its object, and its interpretant’ and it is not ‘in any way resolvable into action between pairs’ (Peirce CP 5.484, unless otherwise stated, the numbers in brackets in this chapter refer to Collected Papers, by Charles S. Peirce). The interpretant does not occur in physical phenomena or in nonbiological interactions, in short, in the inorganic world.

The definition of semiosis proposed by Krampen is illustrated graphically as a ‘semiotic matrix’ (cf. 1997: 252, fig. 5.1). A rhombus at the center of the semiotic matrix represents the interpretant  $I$ .

What we find interesting is the pivotal role of the interpretant in the semiotic matrix, indicated by placing the rhombus that represents the interpretant in the centre.

The semiotic matrix, which displays the various partial semiotic processes, is used in the same article to graphically illustrate other types of semioses such as Pavlovian conditioning, the inference ‘if ... then’, hypothesis formation, and a ‘chain of thought’. In all these types of semioses the semiotic matrix graph emphasizes the central role of the interpretant (cf. Ibid: 253-257).

Dialogue is also illustrated graphically through the semiotic matrix (cf. Ibid: 260). The author of the article in question maintains that dialogue commences with signaling behavior from a sender intending to communicate something about an object. What is not taken into account by Krampen is that the 'if...then' inference, hypothesis formation, and a 'chain of thought' are dialogic forms in themselves (cf. Ibidem).

In inference, in the hypothetical argument, and in the chain of interpreted and interpretant thought signs generally, dialogue is implied in the relation itself between the interpreted and the interpretant .

The degree of dialogism is minimal in deduction where the relation between the premises and the conclusion is indexical: here, once the premises are accepted the conclusion is obligatory.

In induction that too is characterized by a unilinear inferential process, the conclusion is determined by habit and is of the symbolic order: identity and repetition dominate though the relation between the premises and the conclusion is no longer obligatory.

By contrast, in abduction the relation between premises and conclusion is iconic and dialogic in a substantial sense, in other words, it is characterized by high degrees of dialogism and inventiveness as well as by a high margin of risk for error. To claim that abductive argumentative procedures are risky is to say that they are mostly tentative and hypothetical with only a minimal margin for convention (symbolicity) and mechanical necessity (indexicality). Therefore, abductive inferential processes engender sign processes at the highest levels of otherness and dialogism.

The special relation that exists between sign (interpreted) and interpretant as understood by Peirce is a dialogic relation. Peirce evidenced the dialogic nature of the sign and semiosis.

In semiosis of information or signification (cf. Th. von Uexküll, 'Biosemiosis', 1997, and 'Varieties of Semiosis' 1991) where an inanimate environment acts as 'quasi-emitter' — or, in our terminology, where the interpreted becomes a sign only because it receives an interpretation by the interpretant which is a response — receiver interpretation is dialogic. Not only does dialogue subsist in semiosis of communication (Th. von Uexküll) where the interpreted is already itself an interpretant response directed to being interpreted as a sign before it is interpreted as a sign by the interpretant, but dialogue also subsists in semiosis of symptomatization (Th. von Uexküll) where the interpreted is an interpretant response (symptom) which is not directed to being interpreted as a sign, as well as in semiosis of information or signification.

Dialogue does not commence with signaling behavior from a sender intending to communicate something about an object. The whole semiotic process is dialogic. 'Dialogic' may be understood as dia-logic. The logic of semiosis as a whole and consequently of Krampen's semiotic matrix is dia-logic. The interpretant as such is 'a disposition to respond', an expression used by Krampen (1997: 259) to describe the dialogic interaction between a sender and receiver.

Krampen's semiotic matrix confirms the connection established between dialogue and semiosis insofar as it shows that the two terms coincide, not only in the sense that dialogue is semiosis but also in the sense that semiosis is dialogue — the latter being an aspect which would seem to escape Krampen. The dialogue process presented in the semiotic matrix is similar to the 'if ... then' semiotic process, to hypothesis formation, chain of thought, and functional cycle after Jakob von Uexküll. In Krampen's article the semiotic matrix illustrates dialogue with two squares which represent two partners, the sender and receiver, where each has its own rhombus representing the interpretant. Despite this division, the graphic representation of dialogue is not different from the author's diagrams representing other types of semiosis. It could be the model, for example, of an 'if...then' semiosis in which the two distinct interpretants are the premises and the conclusion of an argument in a single chain of thought.

### **Alterity in the symbol**

One of the fundamental problems of the sign, especially of the human sign, is that of establishing in what way we might reconcile similarity and difference, stability and transformation, uniqueness and polysemy, identity and alterity.

The symbolic universe is not stable, uniform and monolithic. It is made of deviations, differences, deferments and renvois, displacements and transformations. In other words, we need to explain in what way alterity is able to infiltrate the very sphere of the symbolic.

It is precisely the semiotics of Peirce that offers a possible solution to the problem, especially because in his theorizations the symbol, the sign par excellence, is such because alterity and identity co-exist in it. In the Peircean conception of the symbol, alterity is constitutive of the very identity of the sign. By taking Peirce's viewpoint into consideration we are led to the awareness that the problem of the connection between identity and alterity in the sign is not a problem of semiotics alone but also concerns the theory of knowledge. It is not, in fact, incidental that Peircean semiotics is definable as cognitive semiotics.

In Peirce this problem directly concerns logic which as a theory of argumentation also involves the problem of dialogue.

Abduction belongs to the sphere of the symbolic as intended by Peirce, that is, it concerns the transuational: the symbol is a transuational sign because it signifies through the mediation of another sign which functions as an interpretantl (cf. CP 2.92).

The symbol is a sign seen in its dependence on a third element, the interpretant, as compared to the two-way relation constituted by the sign and that to which it refers, that is, the object.

This triple relation exists by virtue of a law, a convention, an arbitrary decision. The symbol itself is a general type of law, that is to say, it is a Legisign and as such acts through a Replica. Not only the symbol, but also the object to which it refers is of a general nature (cf. CP 2.249). However, identity of the law, its self-sufficiency and repetitiveness is continually threatened. Unlike the semiotics of Saussurean derivation it is not founded on a code, a system of conventionally established modalities of correlation between elements at the level of expression and those at the level of content. The symbol refers to the object in some particular respect or quality through a thought that interprets it, that is to say, through a sign which functions as an interpretant and which in turn is a sign related to an object through the mediation of another interpretant, and so forth ad infinitum.

Anything which determines something else (its interpretant) to refer to an object to which itself refers (its object) in the same way, the interpretant becoming in turn a sign, and so on ad infinitum. [. . .] If the series of successive interpretants comes to an end, the sign is thereby rendered imperfect, at least. (CP 2.303)

This endless succession of interpretants, this interminable process of deferment and renvoi is the foundation of the law of the symbol, that is to say, that which zu Grunde geht. Peirce makes the overcoming of the myth of the ontological guarantee of the code possible by proposing a semiotic conception according to which identity of the law of the symbol is continually exposed to alterity of the interpretant and object. At the same time all the difficulties that the myth of the ontological guarantee of the code involve concerning the explanation of the communication process are overcome.

A double exclusion associated with this myth is also annulled: that is, the exclusion of the subjectivity of the interpretant and objectivity. In fact, identity of the law of the symbol is such in Peirce merely on the basis of creative mediation, of "tri-relative" influence (CP 5.484) which

impedes closure within a dual and fixed relation in which alterity ultimately merges into identity and the logic of sameness. This instead would happen if to interpret were to mean nought else but to decodify and if the foundation of the symbol were to be given by the code instead of by the interpretant.

Abduction plays a central role in the symbolic and indexical nature of the sign. This is especially true of that which concerns the innovation and enrichment of the interpretant. And all this is due to the iconic character of abduction.

An originary Argument, or Abduction, is an argument which presents facts in its Premiss which present a similarity to the fact stated in the Conclusion, but which could perfectly well be true without the latter being so, much more without its being recognized; so that we are not led to assert the Conclusion positively but are only inclined toward admitting it as representing a fact of which the facts of the Premiss constitute an Icon. (CP 2.96)

In denoting an object by virtue of a law, the symbol involves in dexicality within its very own universe given that it is determined by existent instances in that universe:

There must, therefore, be existent instances of what the Symbol denotes, although we must here understand by "existent," existent in the possibly imaginary universe to which the Symbol refers. The Symbol will indirectly, through association or some other law, be affected by those instances; and thus the Symbol will involve a sort of Index, although an Index of a peculiar kind. It will not, however, be by any means true that the slight effect upon the Symbol of those instances accounts for the significant character of the Symbol. (CP 2.249, the italics are my own)

Although it determines the relation of the symbol to its object (Dynamical Object), and its content (Immediate Object), the interpretant does not per se permit identification of its instances. In this case too, identity involves alterity. Such alterity, however, is entirely internal to one and the same system whether meaning is expressed in a more analytic form by means of other expressions (endolinguistic translation as intended by Jakobson) within the same system, or meaning is translated (interlinguistic translation) into the expressive elements of another system. However, not even in these relations of substitution through which the sign develops its self-identity, is identity at all fixed and definitive. It is obtained rather at the price of a relative indeterminacy and in stability of the sign which must appear alien in order to be this sign here.

The identification of a sign cannot be developed if not by exhibiting another sign and cannot be grasped if not as the reflection in the mirror of another sign: therefore, it also contains all the

deformations that such a play of mirrors involves. But, as previously mentioned, the interpretant does not come into play for identification alone.

The relation to the interpretant also makes the surpassing of identification possible so that identification becomes comprehension of actual sense. The comprehension of contextual, actual sense does not merely consist in the recognition of elements that constantly repeat themselves without change. Here, too, we have a dialectic unit of self-identity and alterity. The actual sense of a sign consists in something more than what may be merely added to elements so that they may be recognized. Bakhtin (Voloshinov 1973[1929]) insisted on the dialectic nature of the relation between these two aspects of the sign. He labeled them with the terms "meaning" (all those properties of the sign that are reproducible, stable and subject to the process of identification), and "theme" (the new aspects of the sign requiring active comprehension, a response, a viewpoint, and are connected to a specific semiotic situation).

The distinction between 'meaning' and 'theme' corresponds to the sub division of the interpretant, as proposed by Peirce, into the immediate interpretant and dynamical interpretant. The immediate interpretant is fixed by use and tradition, it is given by the correct deciphering of the sign itself, by its recognition, 'and is ordinarily called the meaning of the sign' (CP 4.536). The dynamical interpretant 'is the actual effect which the Sign, as a Sign, really determines' (*Ibidem*; the italics are my own). Considered in relation to both the dynamical interpretant and dynamical object, that is to say, in relation to 'the Reality which by some means contrives to determine the Sign to its Representation' (*Ibidem*), the sign can by no means be repetitive. Each time it is used we have a new semiotic act. This implies a continual renewal of the sign so that the corresponding interpretant is never fixed and established. All this is connected to the conception of the hypothetical and approximative nature of knowledge which underlies Peirce's 'cognitive semiotics'.

### **Indexicality and iconicity in the symbol**

Let us think a moment about the Peircean conception of the relation between the symbol, icon, and index which has very often been mis understood. This has come about because the symbol, icon and index were thought to denote three clearly distinguished and different types of sign, each with characteristics so specific as to exclude the other two. Now, first of all, signs which are exclusively symbols, icons or indices do not exist in the real world. Secondly, and what most interests us here, in the theory of Peirce the symbol is a mere abstraction. It is never conceived as existing as a pure symbol but is always more or less mixed with iconicity and indexicality, or to say it with Peirce, it is always more or less degenerate.

This implies, therefore, that more than being signs in their own right, the icon and index represent different levels of degeneracy of the symbol. The symbol is not a symbol alone; it almost always assumes some of the characteristics of either the icon or index. The symbol can be represented iconically as a body in a state of unstable equilibrium in which the stabilizing symbolic force is counteracted by the iconic and indexical forces. But this image establishes a relation of contrast between symbol, index and icon when, in fact, they are not distinct, nor are they in a relation of opposition.

Otherwise we would have with respect to the symbol, for example, signs that are purely icons or indices and not contemporaneously symbols, or symbols with no trace of iconicity or indexicality. Perhaps the image that best accounts for the relation of the symbol to the index and icon is that of a filigreed transparency with uneven traces of iconicity and indexicality as opposed to pure transparency.

Indexicality is at the core of the symbol for the very reason that the symbol depends upon the interpretant as a result of its relation to the object. This is what makes a sign a symbol. This means that Transuasion, which characterizes the symbol making it a transuasiational sign, is considered in its obsistent aspect (cf. CP 2.92), and that the index is an obsistent sign. On the other hand, as already seen above, in so far as it is determined by the instances of what it denotes and being a general type of law, the symbol entails indexicality. In the sign considered as a symbol, identity hinges upon alterity of the sign which is determined by the mediation of the interpretant so that, insofar as it is a symbol, 'a sign is something by knowing which we know something more' (CP 8.332). But this is true because the sign is not a symbol alone, or better still, the very fact of its being a symbol involves iconicity and indexicality for the reason that thirdness, the mode of existence of the symbol, presupposes firstness and secondness or originality and obsistence, the ways of being of the icon and index respectively.

Considered from the point of view of its relation to the object, the sign is a symbol insofar as it involves the mediation of an interpretant; from the point of view of its relation to the interpretant, the sign-symbol is an Argument. This is true if the sign-symbol distinctly represents the interpretant which it determines as its Conclusion through a proposition that forms its Premise, or more generally its premises (cf. CP 2.95). Depending on the type of sign relation that comes to be established in the argument between the premise and conclusion, three kinds of arguments are possible: -Deduction, Induction and Abduction. Though differentiated, all three belong to the sphere of the symbolic and are therefore of a transuasiational nature.



For this reason Peirce used the term Transuasional logic to indicate the doctrine of the general conditions of determination of the interpretant (the conclusion) through propositions acting as premisses (cf. CP 2.93). But three types of arguments are possible because they do not belong to the sphere of the symbolic alone. This implies that not only the category of Transuasion comes into play but also that of Originality and Obsistence (cf. CP 2.84-2.96). In Peirce, the term Symbol indicates the genuine Sign obtained by abstracting from the two levels of "degeneracy" of the sign. These are: the minor level — that of the Index; and the major level — that of the Icon. In the Symbol or genuine sign, signification is dependent upon the relation to the interpretant, whereas in the indexand icon the capacity to signify is relatively autonomous with respect to the relation to the interpretant (cf. CP 2.92).

By virtue of the relation between icon, index and symbol, which is neither of autonomy and indifference nor of opposition, but rather of reciprocal implication, the sign is at the same time both identical to itself, and other.

The relation of implication has different weightings according to whether the iconic, symbolic or indexical aspect dominates and this is determined by the type of semiosis in course. All signs are symbols given that they signify through the mediation of an interpretant, but it is precisely because they do so that they are not symbols alone.

The overlapping of symbols, indices and icons is such in the semiotics of Peirce that if the symbol were to be of a purely symbolic nature, the relation between the premiss and the conclusion in the argument would paradoxically be indexical and not symbolic: it would not, in fact, give rise to a transuasive argument or induction. Among other things, the latter presupposes a hypothesis resulting from a preceding abduction which implies iconicity (cf. CP 2.96). Let us suppose that the relation between the conclusion and premiss is of a purely analytical type thus remaining wholly within the symbolic universe, the conventional/arbitrary, the Law; let us suppose, that is, that there is a mere relation of identity between the symbol and interpretant. In such a case the relation between the conclusion and premise would be of deduction and as a constrictive argument it would have the character of indexicality.

From what has been said so far, the reciprocal complicity between the symbol, icon and index is evident. These three different shades of the sign are in their turn implicated in the cognitive process. This means that they are at the same time categories of both logic and semiotics. This is of importance to that which concerns the character of the Argument and to the role of the icon in the argument of the abductive type.

## **Logic as dia-logic**

Between the sign and the interpretant the relation is not of equality, similarity, reduction of the differences, of ultimate equivalences, or of substitution of the identical with the identical. On the contrary, there is a relation of reciprocal alterity which implies that the sign and interpretant are not to be viewed within a monologic framework: their rapport is dialogic. Such a relation is internal to the sign since the interpretant is basic to the sign function. Furthermore, given that the interpretant, as a sign, refers to another interpretant, and that the sign function is thirdness — a triadic relation between the sign, interpreting thought and object (which as the immediate object refers dialectically to the dynamical object), not only are the dialogic voices internal to the sign, but the dialogue itself is polysemic and open; it is not univocally orientated towards a single conclusion. Given the polyphonic structure of dialogue constitutive of and internal to the sign, alterity, in Peirce, cannot be conceived as an accessory, as something external or mechanically opposed to identity, to subjectivity, or to the interpreting thought. Alterity is essential to the constitution of subjective identity, it is the internal condition, the only possible mode of existence of subjectivity.

Therefore, the relation with the other self is by no means different from that with internal alterity. By the latter we mean the multiple others in dialogue within the single individual continually experienced by the self and with which the self dialectically co-exists and increases (or decreases).

Cases of ‘double and multiple personality’, says Peirce, ‘make quite manifest [...] that personality is some kind of coordination or connection of ideas.’ The word coordination implies ‘a teleological harmony in ideas, and in the case of personality this teleology is more than a mere purposive pursuit of a predeterminate end; it is a develop mental teleology [. . .]. A general idea, living and conscious now, it is already determinative of acts in the future to an extent to which it is not now conscious’ (CP 6.155-156).

Only rarely did Peirce directly examine the so-called ‘problem of the other’, that is, the problem concerning both the possibility of experiencing other selves separate from the self who actually poses the problem, and the possibility of interpersonal communication. This is because Peirce continually dealt with this problem implicitly in his conception of the relation sign/interpretant, and found a solution in characterizing this relation as one of alterity.

On those rare occasions when Peirce did directly examine the ‘problem of the other’, it was to affirm that there is absolutely no ontological or meta physical bias in favour of thoughts or

feelings that the self calls 'mine'. Further, he claimed that experience of the other self does not present a more complex problem than that relative to the fact that specific interpretants are recognized as 'mine'; those through which 'I' become conscious of myself. Such interpretants permit self-consciousness and are related to the signs that they interpret by alterity.

The recognition by one person of another's personality takes place by means to some extent identical with the means by which he is conscious of his own personality. The idea of the second personality, which is as much as to say that second personality itself enters within the field of direct consciousness of the first person, and is as immediately perceived as his ego, though less strongly. At the same time, the opposition between the two persons is perceived, so that the externality of the second is recognized. (CP 6.160)

While the interpretant of a sign can in general be actual or potential the argument aims at determining the interpretant, its conclusion, in a precise and programmed fashion. In the argument, the sign or more exactly the symbol (and given its degeneracy, the other signs as well) directly encounters its interpretant.

This relation of alterity, implicit and virtual in the sign in general but in this case explicit and actualized might lead us to represent the Argument as divided (a division between premiss and conclusion) between the two participators of a dialogue. Now, in the case of the Obsistent Argument or Deduction, both speakers are compelled (cf. CP 2.96) to acknowledge that the facts asserted in the premisses by both or only one of the speakers could not obtain if the fact stated in the conclusion did not exist. On the other hand, in the Orinary Argument or Abduction, and in the Transuasive Argument or Induction, speakers can only be inclined towards admitting that the conclusion—which as the rule is drawn from the case and result (induction), or as the case is drawn from the rule and result (abduction) (cf. CP 2.619-631)—is true, given that the speakers are in a position to accept the premisses without having to accept the conclusion also. This division of the Argument into parts so that each is supported by a subject, on the one hand, accounts for the difference between a proposition, a sign for which no-one makes himself responsible, and an assertion for which someone makes himself responsible for the truth of a proposition through the judgement which is precisely the act wherewith one resolves to adhere to a proposition (cf. Peirce 1902: 5-15). On the other hand, the dialogic division between the parts enables us to take into account the level of dialogic complexity, that is, of alterity, differentiation, distance and novelty that comes to be established in the argument between the sign and the interpretant that it represents.

It is not incidental that Peirce should have used the term Speculative Rhetoric to designate transuational logic (cf. CP 2.93), the doctrine of the general conditions whereby symbols and other signs refer to and determine the interpretants. In fact, the term Rhetoric implies reference to the addressee, the interlocutor and recalls such terms as to converse, to argument, to convince and to account for. Furthermore, it represents a break in the conception of reason and reasoning that originated from Descartes, and therefore alludes to the uncertain, probabalistic, and approximative nature of human knowledge. Peircean logic is presented as dia-logic. It is closely related to the conception of sign (with its various shades of degeneracy beginning with the genuineness of the symbol) as identity/alterity. The sign, in fact, is actualized by a relation of alterity to the interpretant with out which no specific conferral of sense would be possible.

The interweaving of iconicity, indexicality and symbolicity involves different levels of dialogue and alterity of the interpretant (conclusion) with respect to the initial propositions of the argument (premisses). How ever, this is quite independent of the fact that the selves which determine propositions through judgements transforming them into assertions, and which argument among themselves, should be external to each other or part of the same person. We could have a purely formal dialogic situation with two or more interlocutors between whom, however, there is no effective relation of alterity, or we could achieve a substantially dialogic interaction among the selves of one and the same person.

### **Degee of alterity in deduction, induction and abduction**

In deduction the relation to the interpretant is of the indexical type; in induction it is symbolic; in abduction, iconic.

In the case of deduction there is no relation of alterity (or at least it exists at a minimal level given that there is always a certain amount of distancing in the deferment and renvoi to the interpretant between the two parts of the argument, that is to say, between the premisses and the interpretant-conclusion). Once the premisses have been accepted the conclusion imposes itself making its acceptance compulsory. We are dealing with obsistence which characterizes the category of secondness and is typical of the index. There is secondness and obsistence each time two terms are re lated to each other in such a way that one term cannot be eliminated without negating the other (CP 2.84). Such terms are connected to each other by a relation of dependence and reciprocal imposition. If such were the relation of the self to the other (for reasons already given it is of no consequence whether this other is intended as being external or internal to the sphere of the single

individual) neither of the two would have alterity, nor effectively be other given that their existence would come to depend upon reference one to the other: 'If x, therefore y' 'If y, therefore x'.

These formulas do not express an effective relation of alterity as it truly exists between the self and the other. The two terms are between themselves other because each exists autonomously, manifests itself independently from the position that is taken towards it as self. Obsistence, which characterizes the category of binarity, does not make alterity possible. An effective relation of alterity is not possible where there is binarity, secondness, and therefore obsistence. Relations of alterity are not possible in a system of binary oppositions where an element exists with its distinctive traits only on the condition that it refers to another element and would be destroyed should this other element be negated. Alterity goes beyond such a system, it is not part of the Totality, of the sphere of the identical, of the order of discourse. If each self is other, this is because it is not reduced to the meanings, roles, and functions foreseen by a specific code.

Take, for example, a husband and wife. Here there is nothing but a real twoness; but it constitutes a reaction, in the sense that the husband makes the wife a wife in fact (not merely in some comparing thought); while the wife makes the husband a husband. (CP 2.84)

The category of binarity appears in the case of doubt (duo habeo) which as such does not imply something: there is no opening therefore towards alterity. This is especially true when by doubt we intend total doubt in the Cartesian sense (see Peirce's criticism of Cartesianism, CP 5.265). The category of binarity also appears in negation, similarity, and identity (cf. *ibid*). Identity does not mean to exist for the self, which, on the contrary, characterizes alterity, but presupposes reference to a second term on which it depends. Individual identity is a 'markedly dualistic conception'.

The two speakers among whom a deductive type of argument is hypothetically divided are connected by a relation of reciprocal dependence and constraint. Despite each having its own identity they are not reciprocally other just like husband and wife, where one cannot exist without the other. In the deductive argument the premiss determines the conclusion, that is, the precedent determines the consequent with the same force of compulsion with which the past imposes itself upon the present. The conclusion must passively acknowledge the premiss which has already been formulated like a *fait accompli*:

[...] the Conclusion is drawn to recognize that, quite independently of whether it be recognized or not, the facts stated in the premisses are such as could not be if the fact stated in the conclusion were not there; that is to say, the Conclusion is drawn in acknowledgement that the facts stated in the Premiss constitute an Index of the fact which it is thus compelled to acknowledge. (CP 2.96)

In induction, on the other hand, the conclusion is not imposed by the premiss and is susceptible to modification. The value of the facts stated in the Premises depends on their predictive character. The premisses, therefore, refer to the interpretant (conclusion) on which their meaning depends as well as to their status as assertions and not mere propositions. Thus the first part of the argument, completely orientated as it is towards the second part (the interpretant) is a predominantly symbolic type of sign. We do not have here the predetermination of one part of the argument by virtue of the other as occurs in deduction. They are to a degree independent of each other in the sense that if the assertion of the premisses is definitely a function of the conclusion, the facts stated could exist even if the fact stated in the conclusion did not.

The category of mediation or thirdness with its characteristic element of Transuasion, dominates (cf. *CP* 2.86). Given that in induction there is no determination of the consequent by the precedent, as occurs on the contrary in deduction, it is not so much memory and the past that has weight in the argument, as prediction, expectation and orientation towards the future. The premiss predisposes the interpretant, it feeds the conclusion and is its foil.

There is an adjustment to the future in the sense that the formulation of the premisses whatever they be, and the very statement of the facts could not have been, had a third element—prediction—not been formulated. Contrary to the deductive argument dominated by the category of obsistence, the transuasive argument or induction, by virtue of its opening towards the future, of the importance attached to reference to the interpretant, and of the lack of a relation of mechanical dependence of the conclusion upon the premisses, offers us the possibility of broadening our beliefs.

Despite this, however, the inductive argument is merely repetitive and quantitative, given that its sphere of validity remains that of the fact, that is, of the totality of facts on whose basis alone can it infer the future. As in deduction, the inductive process is unilinear and moves in a precise order of succession from the point of departure to the point of arrival without interruption, reversal or retroaction as opposed to abduction which, as we will see, moves backwards from the consequent to the antecedent.

Because of the role played by the category of mediation, we might compare induction to the process of natural evolution (cf. *CP* 2.86). We might also say that it is similar to a narrative process which develops the unitary story of an ego or single individual. Furthermore, relations in both the inductive and deductive arguments (similarly to those of egological identity which obviously cannot be reduced to the tautology self-self), are relations of the subject-object type. They are, without doubt, relations in which the subject is determined by the object and is projected towards an end that displaces it and makes it move onwards. Such a subject, however, does continually reaffirm its own subjective identity as these determinations and objectives take their place in the univocal and unilinear process of its constitution. We are not dealing, therefore, with intersubjective relations, or

with relations of effective alterity (yet again here intended as being external as much as internal to the same person).

It is the connection of induction to abduction, mediated in scientific research by the experiment, which allows a qualitative broadening, enrichment and renewal of knowledge. c) In abduction the relation between the Premiss and Conclusion is one of similarity: the facts in the premiss form an icon of those facts stated in the conclusion. Renvoi to the interpretant is of an iconic type. Furthermore, whatever is stated in the premises is in dependent of the conclusion in the sense that its validity is independent of the value of truth of the conclusion.

The category of Originality dominates in abduction, 'Originality is being such as that being is, regardless of aught else' (CP 2.89). It is precisely this capacity of being regardless of anything else that constitutes alterity. The other is other because of its being independently of reference to a viewpoint, a function, an objective, a relation of distinction or opposition, or of insertion into a unitary story. For this reason, the other is a surplus external to the totality, to the totality of the Self and Sameness which in so far as being a unity, a teleological organization, is in the order of binarity and mediation. Firstness, or Orience, or Originality is 'something which is what it is without reference to anything else within it or without it, re gardless of all force and of all reason' (CP 2.85). For this reason it cannot be incorporated by the totality, but on the contrary stimulates a breach, a renewal, the reopening and reorganization of a totality which is never definitively concluded and systematized. All knowledge, totality, binarity and mediation, all cognition as adjustment to objects, presuppose orience, that is, alterity. The latter being the lack of adjustment par excellence, the surpassing of the objectifying thought, of the subject/object, and means/end relation.

In its more innovative aspects at the basis of the abductive process, abduction ventures beyond the limits of a defined totality without the guarantee of return or reconciliation to the principles that exist in it. There is a movement towards alterity which more than in terms of intentionality (the latter belongs to objectification and the relation subject/object) or of need, we might express as desire: desire of the absolute other.

The Peircean conception of the interminable deferment and renvoi of interpretants on which the sign flourishes and through which the 'dynamical object' manifests itself, alludes to this non finalized and disinterested movement towards alterity. Peirce, in fact, established an explicit relation between meaning and desire: if meaning characterizes a sign, and if meaning belongs to the family of value, it is connected to desire through the relation between value and desirability (cf. Peirce 1902: 26ff.).

Given that the process of abduction is present in every moment of psychic life including sensation, the inherent opening to alterity is the foundation of all totalizing operations. However this opening is not satisfied, concluded or exhausted in such operations: it does not find its own justification in them. Furthermore, the opening to alterity is relative to the different levels of freedom and creativity in abductive 'orience'. At the higher levels of abductive creativity an effective dialogic relation is established between the parts of the argument. This is due to two main factors: the interpretant is relatively independent of the premiss; and the remainder of the argument contains within itself relations of alterity with respect to the interpretant (the conclusion) which are determined by the level of novelty in the abductive conclusion. We make inferences from case through interpretation on the basis of a rule and a datum or result. The rule, therefore, is not given antecedently to and outside the process of interpretation — there are no pre-established rules that orientate the relation between the parts of the argument uni-directionally.

The conclusion is the interpretant of the statement that describes a certain datum or result, and from this interpretation springs the law or general principle with respect to which the interpretant is determined. The thought-sign (the minor premise) and the thought-interpretant are connected by a dialogic relation which is not pre-determined by the pre-dialogic selection of a law. Retroaction of the interpretant on the premiss to the point that interpretation determines the major premise is precisely what causes us to define this type of reasoning as retroduction or abduction.

### **Alterity in icons and abductions**

We have abductions of the following kind: 'Tom is a person of male sex who has never been married' = 'Tom is a bachelor': in fact, 'bachelor' = 'a person of male sex who has never been married'; as we can see, this kind of abduction does not involve an effective development in thought with respect to what is stated in the Premiss. We could describe them as low abductions: they are characterized by the actualization of exchange and equivalence between the premise and interpretant-conclusion. We also have, however, what we could call high abductions in which there is no equivalence between the interpretant and the datum or result to which it is connected: in such cases the interpretant says something more with respect to the datum or result, it gives more than what the datum offers.

Thus, the interpretant runs risks, and sometimes evaluates the datum in the light of a general principle invented ex novo. A principle, that is, to which the datum is not automatically connected. The interpretant risks an investment without exchange, it places itself in a position which is not at all economical in the sense that there is an investment with no return, that is, without a counterpart.



This happens, for example, in scientific reasoning each time abductions that revolutionize conceptions relative to a specific field of knowledge are produced.

Together with Peirce, we might call the relation that comes to be established between the sign and the interpretant in such abductions, an agapastic relation (cf. 6.302). The premise is connected to the conclusion by a movement of affinity or attraction stronger and more passionate than any calculation of convenience, fair exchange, correspondence and equivalence. Platonically we could say that, in this case, knowledge is animated by Eros, which sets aside all prudence and convenience thus risking exposure even when uncertain of finding support. This does not mean that the relation between sign and interpretant is haphazard.

The deferment and renvoi between sign and interpretant is neither a question of chance (tychism) nor of mechanical necessity (anancism): we are dealing, rather, with a movement of evolutionary development through creative love (agapism). We also need to add, however, that just as there is no reciprocal exclusion between the symbol, icon and index, an agapastic evolutionary process excludes neither chance (tychasm) nor necessity (anancasm). The latter are degenerate forms of agapasm just as the icon and index are degenerate forms of the symbol. Tychasm and anancasm are therefore to be considered as two degenerate expressions of the very agapastic relation (cf. CP 6.303).

The relation between the sign and interpretant in high abductions contradicts the unconditional validity of the model of economic exchange and its extension to all human activity. This also implies moving away from Saussurean semiotics or better still, from a particular way of interpreting it in which both the relation between signifiant and signifié and that among signs in the system of the langue (linguistic value) are led back to the model of economic exchange. It is not incidental that Saussure, in developing his linguistic theory, should refer to the marginalistic economy of L. Walras and V. Pareto. As far back as 1893, Peirce argued that

The nineteenth century is now fast sinking into the grave, and we all begin to review its doings and to think what character it is destined to bear as compared with other centuries in the minds of future historians. It will be called, I guess, the economical Century; for political economy has more direct relations with all the branches of its activity than has any other science. [...] But the study of doctrines, themselves true, will often temporarily encourage generalizations extremely false, as the study of physics has encouraged necessitarianism. (CP 6.290)

In the renvoi and deferment between the sign and the interpretant which forms the thought process, we have, in abduction, signs that though related do not follow on mechanically one from the other, nor do they correlate perfectly: what we do have is a surplus which stimulates the

qualitative amplification, modification and revision of the totality with which at a certain point thought identifies.

The iconicity of abduction consists in establishing a relation between that which originally and naturally is not related: imaginative representation attempts an approach to that which is given as other in order to lead it back to a relation of similarity. Similarity is rightly listed by Peirce together with all that we associate with the category of obsistence; in fact, originality or firstness is surpassed by secondness or obsistence when whatever exists autonomously is related to something else. To have an understanding of alterity in a certain sense means to exceed it. The innovating, creative, displacing capacity of abduction is not to be found therefore, so much in its exhibiting an image which draws that which seems to evade all constraints nearer, as in its directing itself towards the autonomously other.

In the abductive process we run the risk of surpassing the datum, thus developing an interpretant that has its own alterity and autonomy in so far as it is not motivated, justified or compensated by the object-datum it specifically refers to. Such self-sufficiency of the abductive interpretant, that is, its iconicity and originality presents a challenge, a provocation with regards to the concept of identity and totality. It thus questions even that which seemed settled and definitive, and exhibits an image which can neither be incorporated nor accounted for whether through immediate reference to the fact or datum, or on the basis of a system of pre established laws. With a logic that goes beyond the logic of exchange and equilibrium, it is possible for an argument to actualize firstness, originality, or alterity in the very core of the symbolic, of the law, of the transuational.

Although the argument has traces of symbolicity and indexicality, it also has the characteristics of iconic invention whose value 'consists in its exhibitioning the features of a state of things regarded as if it were purely imaginary' (CP 4.448). As we can see, the Peircean conception of Sign allows a revision of the traditional concept of the image. In all western thought from Plato to our own times, the image has always been conceived as a means of reduction to sameness. It is in the image that the subject finds and recognizes himself: the image is nought else but the reflection of he who produces it.

In this sense, the myth of Narcissus is particularly significant. In the function that Peirce assigns to the image, and that is, to the iconic dimension of the symbol, we find instead a new conception: rather than being confirmation and repetition, a moment of encounter and recognition,

the image is *déplacement*, an opening towards alterity, the beginning of a voyage in which the return chez soi is not guaranteed.

Translation from Italian by Susan Petrilli

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