# On Identifying and Identification

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The first aim of this paper is to sketch an account both of the process of identifying and of identifications, the results of the process. I treat identifications as sorts of files of information, or *identification files*. The role of identification files as devices for use in reidentification is central to my account. The process of identifying x is explained in terms of the perception of x and the formation of an identification file that has x as its topic. The topic is the entity the identification file is about.

My proposal does not aspire to capture every aspect of the usage of 'identification' in ordinary philosophical discourse. 'Identification' is a theoretical term, as noted by G. Evans[1]. My proposal should be judged by its theoretical consequences.

The second aim of this paper is to outline the way how the cognitive system (or mind) yields two remarkable kinds of correlation between identifications and topics: equivocal identifications (identifications with two or more topics) and, in addition, different identifications of the same topic. To illuminate the issue, I introduce the distinction between *vertical* and *horizontal* information connecting. I propose the notion of *supermap* as a useful metaphor for explaining the nature of information connecting by mind.

Let me make a concise observation about thought and reference. I am providing an account of identification that aims to be serviceable for theories of thought and reference. It is plausible that a full theory of how a thought is about something rather than anything else needs some account of identification. What makes a thought be about a cer-

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[1] Evans (1982: 145).

tain entity x? This seems to be a job for the notion of identification. It seems prima facie plausible that having an identification of an item x is a necessary condition for an agent A to be able to think about x. In addition, if in order to refer to an entity we need to think about it, theories of reference need to include identification in some way in their accounts. The arguments advanced here will not depend on such assumptions about thought and reference.

This paper will be deliberately silent on whether identifications are concepts or devices working associated to concepts (sometimes called 'conceptions').

The structure of the paper is as follows. Section 1 introduces my proposal about identifying and identification. My account treats identification in terms of perception and information. Section 2 examines the notion of information. Section 3 deals with perception. Sections 4-6 discuss the nature of identification and its connection to reidentification. Section 7 presents two facts which any adequate theory of identification must respect. Finally, section 8 presents the distinction between vertical and horizontal information connecting. The notion of supermap is introduced.

## 1 Identification: process and result

'Identification', like many terms, is ambiguous between meaning a process and meaning the product of that process. My proposal concerns the two meanings of 'identification': the *process of identifying* and the results of the process, the *identifications*.

The results from the process of identifying can be treated as files. I shall call them 'identification files'. The *topic* is the entity (in the most general sense of the word 'entity') which the identification file is about[2].

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[2] The term 'topic' is used in the same sense by Woodfield 1991. The nature of the relation between identification file and topic is not the theme of this paper. I limit myself to point out that there are different particular relations linking identifications and topics. Identification files triggered by perception present their topics due to an informational relation – the received information is information about the topic. Identification files formed by imagination present their topics due to some kind of fit between the conditions included in the identification and the topic. It is plausible that the relation between identification files created by

What *are* identification files? How may the metaphorical notion of a file help us in understanding the nature of identifications? Let me use the notion of information to sketch an answer. Human beings, like other kinds of organisms, capture information about the world through perception. This information is inserted into and stored in our cognitive system. Identification files are cognitive unities constituted by pieces of information that the cognitive system treats as devices for tracking something in reality. I develop this idea in a greater depth in section 4.

I shall classify a process as an identifying process if it begins with the perception of a certain entity and leads in an appropriate way to the formation of an identification file of the same entity. In my proposal, an agent A identifies an entity x iff:

1. A perceives x;
2. The process of A perceiving x results in an appropriate way in the formation of an identification file of x.

The condition (1) excludes from the extension of 'identifying' any process of formation of an identification file that does not begin with the perception of the topic of the identification. The formation of the identification file must be triggered by the perception of the entity which is its topic. The relation between the perceived entity that triggers the identification file and its topic is the relation of identity.

The process of identifying is not the only way of producing identification files. I shall call identification files acquired by the identifying process *perceptual identification files*. Besides them, we have identification files of entities not perceived and so not identified. We may imagine an object by positing something that combines properties – for example, the man with the property of being the fastest cyclist in the world and the property of being the best mathematician of the world. As a result, we have formed an identification file but it does not seem correct to say that we identify its topic. It is a case in which we form the identification file without identifying its topic. The same happens in communication episodes. We can acquire iden-

suspicion and topics is informational as happens with perceptual identifications. Cf. section 5 about identifications created by suspicion.

tification of some entity only by hearsay. However, the hearer does not identify something merely by hearing about it[3]. Section 5 will expand on the theme of formation of identification files without any identifying process.

My account treats 'to identify' as a success verb. I propose that it is correct to say that we identify x uniquely if x exists and we perceive x. The verb 'to identify' should be treated as a success verb because of the connection between the identification act and the reidentification act. After all, the verb 'to reidentify' is a success verb. It seems appropriate to speak in terms of reidentifying only in cases when we meet the entity again. This involves the satisfaction of two external conditions: (i) the entity can exist independently of our meetings and (ii) be met in different episodes. Our alternatives to treating 'to identify' as a success verb would be severing the connection between identification and reidentification (which I claim is a non-starter) or depriving the reidentification notion of success conditions. The last alternative would trivialize the notion of reidentification. The notion of reidentification has an important role in a description of the interaction between agent and world because of its success conditions.

Given the connection between identification and reidentification, only the treatment of 'to identify' as a success verb allows us to ensure the non-triviality of the use of the notion of reidentification. If to identify were merely a cognitive act without conditions of success, what point would there be in talking about reidentifying something? If, for example, merely thinking about Pegasus were an act of identifying Pegasus, then when were I in the future to think again about Pegasus, would I be reidentifying Pegasus?

I propose treating the notion of meeting something in terms of perceptual meeting. The inclusion of the condition of perception in my account restricts the conditions for something to be identified:

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[3] In a theory of perception that claims that the formation of an identification file is a condition for a successful process of perception, the condition (2) would be involved in the condition (1). According to such a theory, the formation of an identification would not be triggered by perception but it would be part of the process called 'perception'. I believe that the problem of such a theory is that it incorrectly fuses perception and registration of information acquired by perception.

besides existing, the entity shall be perceived[4].

The notions of perception and identification file can be defined in terms of the notion of information. To perceive is to gather information about the environment. Identification files are clusters of pieces of information that the cognitive system treats as cognitive modules about something. I shall briefly discuss the notions of information and perception and then return to discussing the nature of identification files.

In what follows, I shall use the term 'identification' as short for 'identification file'.

## 2 Information

I believe that the treatment of the notion of information provided by Fred Dretske is correct in its essential features[5]. This treatment is nicely captured in John Perry's formulation: 'Information is basically what one part or aspect of the universe (the signal) shows about some other part or aspect (the subject matter)' (Perry 2002: 175). One aspect of the universe is capable of carrying information about another because both are related by some constraint, law or principle. If the aspects of the world were not interrelated by constraints, nothing would be able to carry information. I take constraints as necessary or probabilistic relations among types of states of affairs.

A signal contains information about what has to be the case for it to happen. If there is a non accidental connection between being F and being G such that, for example, being F is a necessary condition for something being G, then the fact that x is G carries information that x is F. If it were merely coincidence that what is G is F too, then the fact of x being G would not carry information that x is F.

For example, every grade of expansion of the volume of a portion of mercury is a type of state of affairs that depends on another type of states of affairs, the degree of temperature of the mercury (and its

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[4] One might object that my account is excessively restrictive because the meetings could be non perceptual ones. Any meeting with an entity in which the agent receives information about it and forms an identification file for detecting it in future meetings will count as perceptual in my sense. Cf. sections 2 and 3.

[5] Cf. Dretske 1981.

pressure). If the temperature were not raised, the mercury's volume would not expand (at constant pressure). Due to this connection, the degrees of expansion of the mercury's volume embody information about its temperature.

A state of affairs carries information about another state of affairs only if it is not merely a case of correlation or co-occurrence but involves dependence. A certain state of affairs carries information about the state of affairs on which it depends.

Besides nomological or logical dependence, three other features of information are essential to my treatment of identification:

(a) Agent-independence: information is independent of agents that collect it. The world is full of information because information depends only on the existence of constraints between types of states of affairs.

(b) Portability: information can be acquired, stored and transmitted. This makes the flow of information possible. Additionally, the process of capturing information does not change it.

(c) Aboutness: information is about its source independently of being captured by our senses. For example, the pattern of the rays of the light reflected from the situation that *a is F* carries the information that *a is F*[6]. As reflection patterns depend nomically on surfaces, this pattern carries information about that situation[7].

## 3 Perception and uniformities

I shall take three things for granted.

First, there are individuals in the world having properties, standing in relations and occupying spatiotemporal locations.

Second, individuals, properties, relations and locations can occur in different combinations. In this manner, individuals, properties,

[6] The example is from Adams 1999.

[7] Cf. the Dretske's discussion of intentionality as a feature of the physical world in Dretske (2000: 209-12).

relations and locations can be treated as *uniformities*[8]. Every possible combination is a state of affairs. *Situations* are the actual states of affairs.

Individuals are uniformities recurring in different situations because they persist at least for some time holding properties and relations. Properties and relations are uniformities because they are exemplified by different individuals in different locations. Locations are uniformities because they can be occupied by different entities. A place can be occupied by different individuals at different times. Different individuals can be in different places at the same time.

Third, human beings are able to perceive some uniformities of the environment. It is plausible that different kinds of biological organisms are able to perceive different uniformities. Surely, the uniformities perceived by every kind of organism are in accordance with their members' need to survive. Likewise, it is highly plausible that different kinds of organisms are able to detect a large amount of the same uniformities.

I outline in this paper a proposal on identification capable of coping with the three points above by appropriately connecting identification and perception.

I think that a correct account of identification needs to capture the following fact: the entities that we identify and reidentify are the uniformities that we perceive. Thus, in my view, a correct account of identification needs to be supported by a theory of perception capable of selecting environmental uniformities as perceptual objects. Informational theories of perception like Dretske's are what we need here[9].

Note that someone can accept my proposal that the topics of identification are the perceptual objects and, even so, not consider that informational theories are capable of correctly determining the perceptual objects. I shall not argue in favor of informational theories but I shall just point out that their outcomes are taylor-made for a theory of identification.

One fundamental feature of Dretske's theory of perception is that

[8] I am using the notion of uniformity of Barwise and Perry (1999: 8).

[9] Dretske (1981: chapter 6). Dretske talks about invariants. For the present purposes, I take 'invariants' and 'uniformities' as applying to the same items.

it enables us to explain why we perceive human beings, trees and stones without perceiving the changing retinal images that are causal links in the delivery of information. For Dretske, perception carries information about, for example, the situation that *a is F* and not about the perceptual events which operate as information-carrying causal links because the situation that *a is F* has a higher order of invariance in contrast to variant perceptual events[10]. Thus, perception carries information about its constant source without carrying information about the more proximal and variable events of the causal chain through which the information is carried.

Another advantage of adopting an informational account of perception such as Dretske's is to acquire protection against the relativist consequences of conceiving identification as theory-laden or belief-laden. The class of views that subscribe to the thesis that identification is theory-laden is committed to the claim that if you exchange the theory adopted by the agent for another theory, then – *voilà!* – the agent identifies a different kind of entities. Thus, oddly enough, identification would be relative to the agent's theory. In accordance to Dretske's theory, the perceptual object is selected independently of the beliefs and theories of the perceiver. To perceive trees does not depend on our theories and beliefs. We perceive such entities because we receive information about them. The adoption of this view of perception in combination with the thesis that what is perceived is what is identified can block the claim that every act of identification is theory-laden or belief-laden[11].

## 4 Identification and uniformities

In section 1, I advanced the proposal that identifying x consists of perceiving x and forming an identification file which has x as its topic. Now it is time to characterize what an identification file is.

The metaphor of identification files is a logical one. The infor-

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[10] Dretske (1981: 145).

[11] I really think that this sort of relativist theories relies upon theories of perception which adopt the thesis that the beliefs of the agent (or his theories) determine the perceptual object. For a refutation of this class of theories, cf. Dretske (2000: 105-7).

mation an identification file contains is not physically separated in a module. For example, my identification file of a friend of mine is composed of pieces of information that are physically registered in different parts of my brain. The cognitive system (or mind) treats them as forming a kind of cognitive unity. I will not try to account for how the cognitive system establishes this unity. I think that the mere phenomenon of this unity is a clear sign that the cognitive system is intentional. It works to unify pieces of information in terms of the item or items they are about. Thus, an identification is a cluster of pieces of information that the cognitive system treats as being about a certain entity.

The workings of the mind to unify pieces of information about the same entity are not always successful. One thing is the aboutness of a piece of information, the 'informational aboutness'. Another one is the aboutness ascribed by the mind, the 'conferred aboutness'. This last one determines which pieces of information are inserted in an identification. I take as basic the mind's capacity to treat something as being about something else.

Individuals, properties, relations and locations are recurring. The primary function of identifying is to insert information (received by the senses) about recurring uniformities (the location of food, the appearance of a dangerous kind of animal, etc.) in the cognitive system to use in future meetings with them.

The point of having identifications is to make it possible to track their topics. If there were no reidentification, the memory faculty would merely store pieces of information of no future use. These pieces of information would be taken as pieces of information about entities encountered only once.

Given that identification files are used to detect and track the uniformities of the world, we shall not conceive of them as sums of pieces of information, but as flexible devices of integrated information presenting the topic so as to enable the organism to detect it. In section 8, I discuss the way the cognitive system deploys networks of identification files to detect and reidentify items.

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## 5 Identifications without identifying, ur-identifications, and derivative identifications

We also form identifications without the identifying process. My objective in this section is to sketch how my account accommodates this kind of identifications.

I follow Evans in proposing that perception, memory and communication compose the 'informational system'[12]. The information about x captured by identifying x flows across the community of speakers by communication. Communication allows the transmission and acquisition of identifications formed by another agent. If the identification transmission is successful, the receiver acquires an identification of the same topic.

One speaker can acquire his identification from another speaker in a communication process as a user of a language. Identifications can take two distinct positions in a communicative net. *Derivative identifications* are the identifications derived from identifications formed by another speaker. A non-derivative identification is an *ur-identification*.

The *producer* is the agent who forms the ur-identification of a certain topic. In the communication process, the producer transmits information of his identification to other speakers. *Consumers* are speakers who acquire the identification by communication[13].

Identification files acquired by communication appropriately linked to perceptual ur-identifications preserve the same link to the entity the information is about. That is, they have the same topic as the ur-identification. Transmissions of identifications in a communicative net are topic preserving.

Consumers' identifications are informationally dependent on producers' identifications. Typically, consumers use their identifications for representing the same topic of the ur-identification on which it depends.

Concerning the origin of identifications, a *perceptual identification*

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[12] Evans (1982: 122).

[13] The distinction between producer and consumer is inspired by Evans's distinction between introducers of a name and users who acquire it as mere participants in the linguistic community. Cf. Evans (1982: chapter 11).

is one formed by the activity of identifying its topic. According to my account, perceiving the entity which the identification is about is a necessary condition for identifying it. Identifications of topics unperceived by anyone are *non perceptual identifications*[14]. Ur-identifications can be perceptual identifications or non perceptual identifications. A derivative identification is perceptual if and only if the ur-identification from which it originates is perceptual.

In my view, identifications formed in episodes of illusion are perceptual ones. After all, there is something perceived albeit with interference from distorting factors. The resulting identification is of the perceived item.

Non perceptual identifications can be brought about by imagination, suspicion or hallucination.

Imagination cases are cases of formation of an identification by a combination of characteristics of entities. The topic in this case, if any, is what fits the discriminating information. Identifications of fictional personages are examples of such a process.

The suspicion case is that in which the producer has clues, evidence or reasons for positing that something exists although unperceived.

For example, a man sees (what he takes as) footprints and comes to suspect that they are caused by a certain entity. This suspicion triggers the formation of an identification for tracking the entity, if any, that made the footprints. One real example was the postulation by Urbain Jean J. Leverrier of the existence of Neptune on the basis of the observed orbit of Uranus. Leverrier suspected, given his observations, that a celestial body was causing the perturbations in the orbit of Uranus. He formed an identification of the celestial body and associated it to the name 'Neptune'. In such cases, the ur-identification's topic is merely posited, rather than perceived.

In hallucination, there is no perceived item, but the agent assumes that there is one due to the abnormal working of the sensory and cognitive faculties. The resultant identification is non perceptual be-

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[14] According to my proposal of including perception as a necessary condition for identifying, the class of identifications acquired by the identification process and the class of perceptual identifications are co-extensives. In accounts which do not include perception as a necessary ingredient for the identification process, the two classes can differ in extension.

cause there was no perception at all.

## 6 Reidentification

Whereas 'identification' has a process/product ambiguity, 'reidentification' designates only a process, the activity of reidentifying[15]. Such activity presupposes a successful occurrence of a previous activity of identifying.

The act of reidentification does not produce special types of identification files. It only sophisticates and increases the amount of information gathered in the identification files previously acquired. The formation of a new identification file would be a new act of identifying and not an act of *re*identifying. This avoids the usage of 'reidentification' to signify a product and thus eliminates any ambiguity between process and product.

There are two relevant conditions for the correct application of the verb 'to reidentify', one internal and another external.

The internal condition is that the agent shall previously have a perceptual ur-identification of x to be capable of reidentifying x. This avoids the possibility that the first perceptual meeting of an agent with x counts as a reidentification of x. If Marco Ruffino acquires an identification of Nathan Salmon exclusively by communication and by reading books about philosophy, it is not correct to say that he has identified Nathan Salmon. For the same reason, it is not correct to say that when Marco Ruffino subsequently is presented by a friend to Nathan Salmon himself, he reidentifies Nathan Salmon.

The external condition for there to be reidentification is a stringent ontological condition. There is only reidentification if there is numerical identity between the entity previously identified and the entity encountered now. In other words, the activity of reidentification can be successful only if we have different meetings with the same entity.

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[15] My use of 'reidentification' is not equivalent to the Strawson's use in Strawson 1959.

## 7 Two facts

Any correct account of identification has to respect two general facts: what I refer to as the 'externalist fact' and the 'opacity fact'. In this section I present and discuss these facts. I suggest an explanation for the first fact. The sketch of a proposal to explain the second fact is made in the next section.

> *The externalist fact.* The perceptual identification is *of* the entity that is the source of its information[16].

I treat the externalist fact as a consequence of the nature of the information. The intentional nature of the information explains the connection between perceptual identification and its topic. The explanation can be presented as follows:

1. Every piece of information is about its source.
2. Identifications are composed of pieces of information.
3. Perceptual identifications inherit their aboutness from the aboutness of the pieces of information that compose them.
4. Perceptual identifications are identifications of the entity that is the source of its pieces of information.

Information that $a$ is $F$ is information about $a$. Consider the identification composed only of the information that $a$ is $F$ and the information that $a$ is $G$. Both pieces of information are about $a$. As a result, the identification composed of these pieces has $a$ as its topic. Thus, the link between identification and topic is not forged by any kind of cognitive item. An identification can be of x (because x is its source) and yet not contain information sufficient for distinguishing x from y.

The externalist fact applies only to perceptual identifications. In the case of a non-perceptual identification, the link between identification and topic is forged by means of fit or satisfaction of conditions. In such a case, the topic is the entity, if any, which fits the descriptive conditions stipulated by the body of information of the identification.

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[16] The externalist fact can be rewritten in a number of different ways according to the theory to which one subscribes. For example, purely causal theories can propose that perceptual identification is of the entity that causes it.

If the resulting perceptual identification is composed exclusively of pieces of information about x, the identification has x as topic. It is a *univocal* identification. However, the bundling of pieces of information about x with pieces of information about y results in an identification that has x *and* y as topics. This results in an *equivocal* identification. Thus, I consider that aboutness of information is sufficient to explain what makes identifications univocal or equivocal.

> *The opacity fact.* Pieces of information about different things can be treated by the mind as being about the same thing and, further, different pieces of information about the same thing can be treated as being about different things.

Notice that the mere presentation of the opacity fact involves appealing to the externalist fact. The cognitive system is able to take pieces of information about distinct things as being about the same thing. Moreover, the cognitive system is able to treat pieces of information about the same thing as being about distinct things. As a result, the cognitive system is liable to insert information into inappropriate units of identification.

Let me recapitulate. Aboutness of information explains why the identification D is about x and not about y. Identification D is about x because D is composed exclusively of information about x. But the appeal to aboutness of information will not work for explaining how the mind is capable of treating pieces of information about the same thing as being about different things.

The opacity fact is due not to information but to the use of information by the cognitive system. This is the subject of the next section.

## 8 Supermaps

The connecting of pieces of information by the cognitive system can be classified into two types. *Vertical connecting* is the integration by the cognitive system of the pieces of information received in each particular episode of perception. In vertical connecting, the cognitive system uses only perceptually received information. Typically, perceptual identifications are the results of vertical connecting. *Horizontal* connectings are the different processes of interrelating stored

pieces of information which result in higher organization and integration of the informational body. In horizontal connecting, the decision as to whether information should be grouped as being about the same thing depends not only on perceptual clues but also on reasons, hypotheses and theories. In this case, the mind unifies pieces of information in terms of conferred aboutness. Reasons, hypotheses, and theories guide a lot of our inward working in conferring aboutness to pieces of information.

Vertical and horizontal connectings can happen in combination. In reidentification, for example, there is a combination of vertical and horizontal connectings.

What is horizontal connecting good for? What is its result?

We can say that the cognitive system has a subsystem — the *system of identification* — dedicated to identification and reidentification. The system of identification has as its ultimate goal the generation by means of vertical and horizontal connectings of a network of identifications capable of tracking the relevant uniformities of the world. In other words, the system of identification has as its aim the generation of the most complete picture of the world possible. I shall call it '*Supermap*'[17]. The formation of the supermap compels received information to fit together in appropriate ways to specify the relevant uniformities of the world.

We are detectors of information. But not only that - we are supermappers. Every piece of information throws light on its source and thus on fragments of situations of the world. We go beyond these registers of information. We integrate the parts into a coherent whole, filling the gaps, building hypothetical explanatory hierarchies, and so on. Supermaps are like representations of the physical and cultural world in which information is integrated and organized. Identifications are the dots in supermaps.

We can say, with some idealization, that the following principle rules over the cognitive system:

Cartographic Principle (CP): The cognitive system works in order to form one identification for every relevant uniformity.

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[17] The notion of supermap is inspired in the knowledge-map of Strawson (1974, 45-6).

There are three classes of cartographical correlations linking identifications and the entities tracked by them:

(a) Type 1-1 (univocal) — one identification for tracking x in its course in the environment;
(b) Type 2-1 (univocal but duplicate) — two (or more) identifications for tracking the same topic;
(c) Type 1-2 (equivocal) — one identification for tracking two (or more) entities.

The ideal shape for the supermap is the 1-1 type. 2-1 cases are cases of entries which seemingly are routes to different things and 1-2 cases are cases of equivocity. I shall call 'correct' the identifications which are in correlations of type 1-1.

Supermaps overwhelmingly constituted by correlations 2-1 and 1-2 are quite unfit to allow the agent to cope with the world because their dots do not match real divisions of the world.

The capacity to form horizontal connections is a good thing. It gives us supermaps. However, some errors are errors of horizontal connecting. In horizontal connecting, the agent can erroneously take a meeting with an unknown man as a reidentification of a friend or take his friend as another person. Further, the agent can take different properties or places as the same. In addition, the agent can take two occurrences of the same property as occurrences of different ones.

The cognitive system has the function of providing correct perceptual identifications by means of vertical integration of information received by the senses. This is part of the cognitive system's overall function of representing the environment by experience. When the cognitive system operates in a sound way, it is capable of forming correct perceptual clusters. Not to make the correct perceptual identifications is to dramatically lack fitness to the world.

Horizontal connectings are a different business. Such processes are more liable to produce equivocal or duplicate identifications even though they tend to yield identifications in cartographical correlations of type 1-1. The reason is that they are based not only on perceptually received information but also on beliefs, theories, hypotheses, and assumptions in order to establish the identity of the topics

of the identifications. The interference of beliefs and theories expands the possibilities of connecting items of information received in perceptually discontinuous episodes which really are about the same thing. However, this same fact exposes the cognitive system to the risk of formation of identifications in correlations of type 2-1 or 1-2.

The capacity to build horizontal connections increases our fitness to the world by making our provisions of information about uniformities more integrated and organized. The price for the use of this capacity is the increasing risk of error and formation of equivocal identifications. It is worthwhile.[18]

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