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THE BIOLOGICAL FOUNDATIONS OF IDENTITY IN THE WORKS OF ANTONIO DAMASIO. THE SOCIOLOGICAL IMPLICATIONS

Abstract. This paper confronts the modern findings of neuroscience presented in the works of Antonio Damasio with classic and contemporary concepts regarding the phenomenon of self / identity developed on the basis of the social sciences. In my view, both types of consideration involve illegitimate reduction of presented phenomena either by inadequate analysis of social entities, or by underestimating their biological basis.

Keywords: self, identity, neuroscience, sociology, emergence.

1. Introduction

Contemporary findings in neuroscience, such as identification of areas of the brain and the mechanisms accounting for the formation of self and consciousness, social emotions, and empathy, are making researchers rethink fundamental issues in the social sciences. Thanks to spectacular discoveries relating to the human nervous system, scientists are trying to re-establish the relationship between psychic and physical phenomena, which applies in particular to considerations about the nature of the mind and the relationship between mind and body (Mianji 2015: 55–61). Neuroscience is the basis for an attempt to explain the phenomenon of social nature (Garza, Fisher Smith, 2009: 521–522). Therefore, new theories are formed to connect the achievements of such diverse disciplines as neuroscience, philosophy of mind, psychiatry, psychology, or sociology. Connecting far distant views and paradigms creates the need to redefine the scope of these phenomena that seem to be emergent against each other and those that can be successfully reduced to lower levels. A discussion on the issue of reductionism and the emergence of areas in science has become a topical issue (Murphy 2011, Lachapelle 2000, Chibbaro, Rondoni, Vulpiani 2014, Scott 2004: 51–68).

Antonio Damasio is one of the researchers who makes this kind of synthesis. His main interests essentially involve issues of neurology (see: e.g. Damasio, Damasio, Tranel 2012; Feinstein, Adolphs, Tranel 2012; Mayer, Kaplan, Essex, Damasio, Damasio 2011; Damasio 1999), but his research goes beyond to include such issues as: awareness, mind, emotions, language, and many others (see: e.g. Glenn Kaplan, Damasio, Damasio 2015; Immordino-Yang, Damasio 2007). In his more recent works, the author covers additional issues of self and identity (see: e.g. Araujo, Kaplan, Damasio 2013, Damasio 2010); these were the works that led me to the following consideration.

The phenomenon of identity in sociology (or more broadly in the social sciences) was initially considered in the context of biological phenomena. The classic works on the subject emphasize them as a special ability distinguishing man from animals. At the same time, however, it was pointed out that identity (or rather self – because such a concept was used by the classics) is a property which has developed in the process of evolution as a kind of adaptation to the outside world. It seems to me that today's sociological analyses on this issue increasingly move away from those explanations emphasizing rather processes of a social nature that contribute to changes of the social construction of identity in the modern world (see: e.g. Burke, Stets 2009, Giddens 1991, Gergen 1998, Castells 1997). However, sciences specializing in analysis of the construction and functioning of the brain are making spectacular discoveries that can form the basis for verification of statements in the field of social sciences. The purpose of this article is to present some findings of this type and confront them with theses on self and identity in classic and contemporary social thought to identify their sociological implications.

2. Self and identity understood by the classics of social science

William James was one of the first authors to deal with issues of identity in the social sciences. In 1892, in the first published work *Psychology: Briefer Course*, he introduced the basic concepts which are currently used to describe the phenomenon of identity, such as: *subjective I* (characterizing the entity as knowing subject); *empirical Me – objective* (characterizing the individual as the object of cognition). In his opinion, in the context of the individual self, we can distinguish:

- 1) its components, such as: physical Me, social Me, and spiritual Me;

- 2) the feelings and emotions it evokes i.e. evaluating oneself;
- 3) the actions it causes – finding oneself and behavioral activities towards oneself (James 1892: 177).

Therefore, such understood identity is, in his opinion, a process related to how the individual imagines itself on the basis of the reactions of other people belonging to the social environment. On the other hand, self is based on the feelings which the individual has for itself and a sense of the continuity of personal operations constituting its biography (cf. Stryker 1980: 21–23, Porankiewicz-Żukowska 2011: 62–630).

Charles Horton Cooley published works on the issue of self a little later than William James, focusing in particular on the emotional reaction which in his opinion is the basis of identity. He perceived the essence of this phenomena in the inherent human capacity that he called a *sense of appropriation*. This ability is developed in the process of socialization and makes the individual mark emotionally the objects of the external world – including itself – and gains knowledge and evaluation of itself as the reflected perceptions of other people. The latter ability was called by Cooley *the reflected self – the looking-glass self*. (cf. Cooley 1902: 136–178, Cooley 1992: 179–204).

Issues related to the social origins of self were also undertaken by Mark Baldwin, focusing in particular on the mechanism of its formation. This author distinguished three stages of shaping identity in human development: the *stage of projection* in which the child becomes aware of the existence of others and notices the relationship between them, the *subjective stage* – when man realizes his existence and the distinctiveness of his own body and emotions, and finally *the transference stage* – when the child realizes that the body and emotions of other people are subject to the same regularities as its own. In addition, the author distinguished two phases of self – habitual, being a consistent structure formed as a result of previous interactions, and accommodative – which is a reflection of changing social situations (cf. Baldwin 1906: 276–305, Baldwin 2007: 24–41).

Special contribution in creating a sociological analysis of the phenomenon of identity is attributed to the theory of George Herbert Mead, who made in his work a synthesis of the above presented positions. Following William James, he declared that the self is composed of two elements. These are: *self as object Me* – internalized by the individual reflection of the social world, and *self as subject I* – expressing spontaneous, creative, individual elements of the identity of the individual. *Me* has a collectivistic character, and because of that the individual moves smoothly within the framework of social relations; on the other hand, *I* is unique to the individ-

ual and forms the basis for its sense of continuity in changing circumstances (its biographical identity).

Just as in Cooley's theory, Mead bases the phenomenon of self on imagining by the individual the perspective of other people. George Herbert Mead used here the notion of *role taking*. Adapting to the social world by individuals is achieved, in his opinion, through the mechanism by which they imagine themselves within the social roles played by others. Thus they can imagine better functioning of the whole society, as well as the system of evaluation and social requirements that apply to them.

Self develops in two main phases – children in the playing phase test the adoption of roles of other people, which gives them the opportunity to acquire an initial awareness of social relations – in a phase of the game they realize the general principles characteristic of their social systems. Therefore, self as such is a process that is started as part of socialization.

George Herbert Mead treats the above processes as a result of adaptation of human organisms to the environment. Thus, in the process of evolution, people developed the mind – the ability to use significant symbols, thanks to which it is possible to act beyond animal instinct – the ability to think before acting. The mind made it possible to acquire language, which led to the development of communication and the development of extensive social organization. Moreover, Mead believed that the distinguishing feature of man from the animal world lies in self-consciousness, which arises as a result of the development of the self and gives the individual the possibility of symbolic imaging of itself (cf. Mead 1934: 63–104; Mead 1975: 63–307).

3. Biological base of identity in the works of Antonio Damasio

The above considerations of classics of social thought on the mind, self, and identity, seem to assign this kind of capacity primarily to humans and animals with a developed nervous system. Just as in the classic sociological theories concerning the self, the neurosciences regard the conscious mind as a consequence of the evolutionary adaptation of organisms to the environment – its development has increased the chance of survival of the organisms which are equipped with it (cf. Damasio, 2010: 202). According to the latest discoveries in the field, consciousness itself, however, has a longer origin as it has evolved slowly and its elements can be found already in very simple organisms.

3.1. Proto-self

According to Antonio Damasio, consciousness has its origin in the biological processes of life support, and more specifically, the basis of its formation lies in the phenomenon of stability. Damasio writes “relative stability is required at all levels of processing, from the simplest to the most complex. Stability must be there when you relate to varied objects in space or when you consistently react emotionally in a certain way to certain situations” (Damasio 2000: 134–135). A characteristic process of all living organisms is to strive for homeostasis; that is, seeking such living conditions that allow one to maintain internal balance. Damasio says that the primary mechanism is the seed of awareness and calls it *proto-self*. In his opinion, even a “simple organism made up of one single cell, say, an amoeba, is not just alive but bent on staying alive. Being a brainless and mindless creature, an amoeba does not know of its own organism’s intentions in the sense that we know of our equivalent intentions. But the form of an intention is there, nonetheless, expressed by the manner in which the little creature manages to keep the chemical profile of its internal milieu in balance while around it, in the environment external to it, all hell may be breaking loose” (Damasio 2000: 136).

Maintenance of the organic equilibrium requires a complex procedure for controlling life processes. Living organisms are composed of cells that are continuously exchanged – the process is a continuous reconstruction. Damasio speculates that this primitive, unconscious, biological process is the predecessor of the construction of conscious I. Therefore, *proto-I* is defined by him as a coherent set of neural patterns that map the physical structure of the body (cf. Damasio 2000: 154). Assuming that consciousness is a kind of biological tool that is used for better management of resources by the body, Damasio argues that “objects and processes we confront in our daily lives acquire their assigned value by reference to this primitive of naturally selected organism value. The values that humans attribute to objects and activities would bear some relation, no matter how indirect or remote, to the two following conditions: first, the general maintenance of living tissue within the homeostatic range suitable to its current context; second, the particular regulation required for the process to operate within the sector of the homeostatic range associated with well-being relative to the current context” (Damasio, 2010: 46).

Bringing issues related to the identity of the original biological processes characterizing organisms that have developed very small nervous systems, at first glance may seem unauthorized reductionism. It is not widely accepted procedure to introduce simple biological organisms into considerations about

identity. Deriving the notion of value from the biological needs of living organisms seems to be even more controversial for humanists and social scientists. As I see it, Damasio realizes these controversial theses, yet his basic task involves locating the parts of the brain that are responsible for the mind, self, and consciousness, which is, in my interpretation, partly responsible for identity. With slight disbelief, he finds on the basis of his research that these mechanisms are based on the so-called activity of old brain structures such as the brain stem. They are not only (as it was thought until now) the tasks of the neocortex, whose evolutionary development is attributed mainly to higher mammals and man (Damasio, 2010: 172–176). These facts, according to the convinced author, show that the conscious mind is the result of an evolutionary process which began long before man appeared.

3.2. The Core Self

Proto-self, described above, is of course only a biological disposition, which in the later stages of evolutionary development turns into identity. In order to exist it must have organic equipment, characteristic of more developed organisms. A brain and developed nervous system are required – *the core self* is in fact characteristic of those organisms who create a mind – Damasio understands it as the ability to create maps of all objects which the body meets with, including itself (Damasio, 2003: 176–178). The author boils down the appearance of core self to two overlapping processes: creating an imaging, non-verbal record relating object–body as the source of a sense of “I”, and extending the ability to create images of an object by locating it in a specific context of time-space. As a result of the combined action of these two processes “a sense that one knows” is created or, in other words, experience of the world from the perspective of first-person – the main actor (Damasio 2000: 168–171). According to Damasio, it is a variation of consciousness of the minimal range – a sense of “here and now” unloaded with past and future – responsible for the “I” of a person but not its identity (Damasio, 2010: 130). *Protoself* is transformed into *core self* to have a connection with the events in which it participates. This transformation initiates a process – the transformation of the original feeling, which results in “a sense of familiarity of object” through which it shall be distinguished from others, then it is given greater significance – attention of the body is directed toward it. Damasio describes it this way: “at the end of this cycle, the mind includes images regarding a simple and very common sequence of events: an object engaged the body when that object was looked at, touched, or heard, from a specific

perspective; the engagement caused the body to change; the presence of the object was felt; the object was made salient” (Damasio 2010: 156). In this way, the mind gets *core self*. A similar process applies to objects that are not currently experienced, but only recalled from memory. The mind, through the mechanism of core self, acquires the ability to evaluate images – the values associated with this process take the form of sensations (Damasio 2010: 156–157).

3.3. Autobiographical self

Autobiographical self has both conscious and unconscious dimensions. It consists of records of biographical memories grouped in such a way as to permit their immediate recall. For this reason, a biographical self requires lots of coordination of related processes. According to Damasio, there are particularly two mechanisms coordinated with each other: the first, which is in addition to *core self* and is responsible for ensuring that groups of memories were started as its images, the second is a mechanism for global coordination responsible for recalling specific memories in the form of images, combining them with *the proto-self*, and storing a combination of these two processes over a period of time. The above coordination mechanism requires an organic base, which in large extent goes beyond the needs of the *proto-self* and *core self* – it seems to require a brain, which is possessed by humans and some mammals (Damasio, 2010: 161–162). Its existence requires large memory and reasoning ability to intelligently manipulate the stored content. While our *core consciousness* is our biological equipment, and cultural systems have a relatively small impact on it, this autobiographical consciousness is also stored in the genome, but it is modified by the culture of each individual. “An organism in possession of extended consciousness gives evidence of attention over a large domain of information which is present not just in the external environment but also internally, in the environment of its mind” (Damasio 2000: 201). With an *extended consciousness* we can plan complex behavior in the long term and it is a condition of the formation of identity in the sense we have become accustomed to on the ground of the social sciences. In my opinion, it is worth noting that its formation is associated with the existence of emotions and feelings (Damasio, 2010: 123). As a result, its appearance in the process of evolution has given rise to cultural systems.

4. Conclusion – sociological implications of the considerations of Damasio

4.1. The problem of biological reductionism, the role of cultural systems

According to Antonio Damasio, creating a culture is related to the homeostatic impulse – the desire to homeostasis I wrote about making the characteristics of proto-self. Cultural phenomena have in fact, in his opinion, the aim of correcting any possible disturbances of life processes. Damasio writes: “the elaboration of moral rules and laws and the development of justice systems responded to the detection of imbalances caused by social behaviors that endangered individuals and the group. The cultural devices created in response to the imbalance aimed at restoring the equilibrium of individuals and of the group. The contribution of economic and political systems, as well as, for example, the development of medicine, responded to functional problems that occurred in the social space and that required correction within that space, lest they compromise the life regulation of the individuals that constituted the group” (Damasio, 2010: 220). Disorders of this type are detected by the human mind protecting the so called cultural homeostasis; the mind is trying to prevent them. Therefore, culture possesses a more perfect way to meet the body’s needs.

In my opinion, the author of the considerations discussed here did not sufficiently emphasize the fact that this human culture initiates the process of self that is created in the process of socialization and cannot be created outside the process. So if identity is a product of evolution, its emergence triggered processes of emergence for which the biological equipment is only a basis, which will not be activated without social contact. To paraphrase Damasio, it can be concluded that the birth of the self is some kind of evolutionary trap. Having freewill, conscious subjects internalize values in the social context and the quality of the environment in which socialization takes place decides whether they are compatible with biological value or not.

According to Damasio, the process of social reflectivity, which is the basis of identity, depends on the so-called *stimulated loop of body* i.e. based on an emotions and feelings mechanism by which the mind is able to simulate non-existent states of the body in order to predict their possible effects (see: Damasio, 2010: 82–84). This mechanism, in a more advanced evolutionary version is responsible for the social skills underlying identity. Damasio refers here to the discovery of the so called *mirror neurons*, which are our organic equipment responsible for empathy. As in the case of the above

relationship, *biological value* vs. *social value*, I believe that we are dealing with another example of the phenomena of emergence in the sense that, while the mechanism of reflectivity does have a biological basis, it seems to me that it cannot be brought down to it – mirror neurons are activated in social contact and units deprived of such contact will definitely lose the chance for smooth functioning in society, which is proved by the cases of people brought up in social isolation. In the work quoted many times in this article, “Self Comes to Mind. Constructing the conscious brain”, Antonio Damasio refers repeatedly to William James, deriving the knowledge of self from his views. Unfortunately, he ignores many sociological findings on this issue. That is why, in my opinion, he fails to avoid the reduction of social phenomena to the biological level. The lack of a broader social perspective causes that the phenomenon of identity emerging from the research of this author will be reduced only to the dimension of individual biography, omitting the context linked to the participation of individuals in social groups (normative-interactive) and wider cultural systems.

4.2. The problem of sociological reductionism – liquid identity

The findings of neuroscience presented in the works of Damasio, despite the reductionism pointed to by me in the previous section, are the basis for the correction of part of the sociological analysis regarding the phenomenon of self / identity. In the first chapter of this article I characterized the views of the classics of social thought on this issue. They are still the basis of current theoretical research on the subject in contemporary sociology. The theory of George Herbert Mead is particularly appreciated. His arguments have been verified by many social scientists and interestingly, they were (in my opinion they still are) quite differently interpreted. The basic dispute, slightly simplifying this issue, can be reduced to differences in the understanding of the self. While some authors perceive it as primarily a subjective aspect – thus emphasizing the free will of individuals and an almost unlimited ability to create and change external reality and the self (see; e.g. Blumer 1969, Gergen 1998, Giddens 1991) – others emphasize its objective aspect, pointing to the fact that it is primarily an internalization of social structure (see: e.g. Kuhn 1972, Stryker 2006). As a result, despite the fact that contemporary sociology creates increasingly complex theories of identity (see: e.g. Burke, Stets 2009, Stryker 2006, Giddens 1991, Castells 1997), sociological considerations often use the metaphor of the so called *liquid identity*. In my opinion it is extremely inaccurate because liquidity and identity stand in contradiction to each other; identity is a fairly cohesive system of identification and self-evaluation, therefore it should not

be liquid in a healthy adult. In addition, this term implies the situational nature of identity. In my opinion, the works of Antonio Damasio convincingly prove that man is in no sense an autonomous being against its own biological structure; what is more, findings on the biological basis of identity must be included in conceptual systems that describe the issue of identity. Biology and society are emergent systems, but at the same time they link together. Abstracting from social beings *sui generis* and the biological basis of social life must be regarded as unauthorized reduction.

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