

FEEDBACK BETWEEN PSYCHOLOGY AND COMMUNICATION

ȘTEFAN VLĂDUȚESCU*

Abstract

The study is placed at the intersection of the cognitive psychology with the theory of communication. It joins the contemporary effort of the category developing of some experiences in order to obtain the consubstantial instruments to the phenomena and processes upon which, investigative, it is supposed to intervene with them. For the configuration of a viable concept, clear and distinct from the feedback, relevant opinions are analyzed, contradictory positions are confronted and the historical, psychological, systemic and communicational reconstruction of this theoretical construct is achieved. Generally, it comes out that any systemic, cognitive or cogitative process lawfully implies a feedback connection. Finally, it is concluded about the feedback definition as the heuristic instrument of control, specific to the finalist systems. Likewise, the parameters (sides), the moments, the levels, the functions and the feedback typology are delimited and the functioning of some feedback networks within the systems is acknowledged.

Cuvinte-cheie: feedback, comunicare, sistem.

Keywords: feedback, communication, system.

1. THE FEEDBACK PRINCIPLE-AXIOM. THEORETICAL PARADIGMS

In epistemological order, the feedback is rightfully considered as element of the evidence area: principial-axiomatic. Jay Forrester, on the one hand, states, in *The Systems Principles*, that feedback is a principle of the systems. On the other hand, professor Laurențiu Șoitu considers feedback as “axiom” (2001, p. 39).

Referring to the evaluation of the feedback essence, 4 directions are distinguished: the informational orientation, the message, phenomenal-process and systemic-structural orientation.

– M. Zlate’s opinion is that “inverse afferentation or feedback” links the action results, “informing that some results were obtained and not others” (Zlate, 1994, p. 315). M. Miclea (1999) and Sultana Craia is clinging to the informational orientation too (in her opinion, the feedback is “the return of the information, of the retro-information, in a communication”, S. Craia, 2008, p. 93). To the same informational paradigm belong the C.S. Carver’s and M.F. Scheier’s (1981, p. 549), Ella Magdalena Ciuperă’s (2009, p. 49) and Nicolae Rotaru’s position, considering feedback as an element of the communication self-adjustment, “through which information is passing” (Rotaru, 2007, p. 10).

* Universitatea din Craiova, Facultatea de Litere

– J. Leavitt, R.D.H. Mueller (1951, p. 406), Denis McQuail (1999, p. 115), C.F. Popescu (2002, p. 137), V. Tran, Irina Stănciugelu (2003, p. 19) and Alina Țenescu (2009, p. 13) belong to the message orientation. It is about a “specific message, through which the emitter gets from the recipient a certain answer” (Tran, Stănciugelu, 2003, p. 19); this “message” may be a positive one or negative, of “encouraging” the deploying communicational behavior, of changing or interrupting the communication (Tran, Stănciugelu, 2003, p. 29).

– The phenomenal-process orientation is represented by, among others, N.E. Miller, Gh. Boldur-Lățescu, Gh. Ciobanu and I. Băncilă, which imagine the feedbacks as “processes” and “phenomena” that appear in “complex systems”, with “self-adjustment” mechanisms (Boldur-Lățescu *et al.*, 1982, p. 242–243; N.E. Miller, 1985), as well as the professor Nicolae Bălașa which asserts: “the feedback phenomenon assures the finality of the communicational act” (Bălașa, 2005, p. 25).

– For Jay Forrester, the feedback is “the main structural element of the systems” (1979, p. 132) and it represents, in the same time, a systemic strategy (1979, p. 142).

2. NORBERT WIENER'S MAJOR CONTRIBUTION

A well known mathematician, Norbert Wiener discovers that no science deals with an “entire field of the theory of control and communication, both in the machine and the animal”. Estimating the importance of the domain, he gives the science, having the mentioned object, the name of Cybernetics. In his research (1948, 1974), N. Wiener introduces the notions of adjustment, deviation, control and programming. The most important is the notion of feedback (“inverse connection”) with its varieties (the negative feedback that annuls any deviation to the rule; the positive feedback which, on the contrary, increases the deviation) (Wiener, 1966, p. 10).

3. DEFINING (HEURISTIC INSTRUMENT AND STRATEGY)

3.1. HEURISTIC INSTRUMENT

The feedback is a heuristic instrument of adapting and adjustment, specific to the finalist systems with self-organizing and self-control. Practically, it is a *strategy* represented in diagram by a loop. There are points of view regarding the feedback reckoning as a “mechanism”. Considering the feedback an intentional construction, it represents an intentional strategy and not an involuntary mechanism. Besides from being an operation in the standard process of achieving the cognition, the feedback is a cognitive strategy applied in the non-standard processing. The negative feedback “strategy”, as Jay Forrester distinguishes 4 elements: “1. an objective, 2. a noticed state of the system, 3. a way to express the difference

between the objective and the noticed state, 4. a specification of the way it should evolve the action from the existence of this difference” (1979, p. 139, 141). Briefly, the feedback is a strategy characterized by a reaction from the effect to the cause or, better said in the statements of two great Romanian psychologists, Vasile Pavelcu and Paul Popescu-Neveanu: “the causes feed from their own effects, and the effects become the causes of the causes that have been produced them” (Pavelcu, 1971, p. 95); the feedback is the main principle of adapting any system to the environment, by the reaction of the effect onto the cause and the curdling of the self-adjusting reflex circuits” (Popescu-Neveanu, 1978, p. 265).

The inverse connection universally appears in all the systems with self-adjustment and self-organizing. If not visibly marked, it exists anyway as an uncapitalized potential of the respective system. “The feedback is the essential element of adapting to the continuously changing environment” (Kapferer, 1993, p. 32). Moreover, as H. Selye asserts, the one who has launched the concept of stress, “the daily inter-human relations are controlled by inverse connections. Any homeostatic reaction is based on positive and negative inverse connection systems” (Selye, 1984, p. 357).

3.2. THE STRATEGY

For Jay Forrester, the feedback is a systemic strategy (1979, p. 142). It may be recognized in the systems with reaction, those in which “the present action is influenced by the consequences (effects) of the previous action” (Forrester, 1979, p. 22). In the same time, it defines itself as an adjustment, reaction, correction or intervention decision: notions that, as noticed, refers to intentional processes, namely strategic, not mechanical. The informational process, as actualization of a self-controlled, self-organizing and self-training system, develops in achieving its goals two strategies that, by automation, may become mechanisms too (Perruchet P., 1988, p. 72–85). The first strategy is well-known: the feedback. The second is relatively less known: the feed-forward. The latter is a concept that designates the strategic procedure of anticipation, in the system, of the system evolution itself, and of the a-going amendment of the initially visualized course. The first strategy compares the answer from past to present, and the second one, from present to future, capitalizing the past.

4. THE PARAMETERS, MOMENTS, LEVELS AND FUNCTIONS OF THE FEEDBACK

The main characterizing parameters of feedback are: the object-variable (informational, actional, decisional), the finality (raw adjustment control, fine adjustment control) in achieving the objective, the direction (positive or negative), the rule (the deviation interval in which the phenomenon can be controlled as the element-factor of the system, without the radical transformation that will lead to the creation of another system), the amplitude (the measure of the alterations

produced by feedback), the levels and the deviation (the delay of the intervention, the temporal ratio between noticing the relevant variation and the moment of the corrective intervention, of noticing the reaction).

In Dutch school's opinion on communication theory, any feedback has three major sides (Cuilenburg *et al.*, 1998, p. 90). In the first place, a direction, a finality, a regulation. Secondly, a constrained behavior that might be considered as a deviation to the regulation. Finally, the corrective activity or corrective counter-action. Thus, the feedback "infers the continuous reporting of some action results to a pattern, to a pre-existing model" (Ceașu, 1981, p. 74).

In "The Complex Systems Analyses", Gh. Boldur-Lățescu shows that the delays appear between the "event and the decision that follows it" (1982, p. 241). J. Forrester claims that "in all systems there are delays" and "the delays have a major influence on the dynamic acting of the reaction systems" (1979, p. 81, 82). Thus, it is essential that feedback should be characterized by this criterion.

The feedback procedure, by which the process may alter its own course, F. Gonseth asserts, has **three moments**: "examination of the phenomenon and knowing its tendencies, enlisting the so obtained information in the conditions that determine the phenomenon and the use of this retro-information in a programme on the evolution of the phenomenon" (Apud Tonoiu, 1972, p. 322). The feedback interferes in each and at all **levels** (Berger, 1973, p. 86). Which are these? The level of the system, of the sub-systems, of relations and elements.

After a competent and thorough research, J. Abric concludes that feedback, as the "central element of control" of a system, fulfills four functions:

- "the function of controlling the understanding, the receiving the messages in good conditions;
- the function of adapting the message to the actors' characteristics, to the encountered difficulties or to the other events that imply a content or form alteration;
- the function of social control through the flexibility of roles and of the functions fulfilled by different actors, being able to facilitate the understanding of the other's point of view and to favor the social learning;
- finally, the socio-affective function: the existence of feedback increases the actors' inner safety, reduces the apprehension and increases the satisfaction" (Abric, 1999, p. 32). Irena Chiru and Gabriela Rusu-Păsărin share the same opinion (Chiru, 2009, p. 22; Rusu-Păsărin, 2010, p. 24).

5. TIPOLOGY

The taxonomical approaches take into account the assignation of more "categories" (Popescu-Neveanu, 1978, p. 266) or "types" of feedback (Dilts *et al.*, 1980, p. 271).

According to the variable-object, the feedback may be: informational (when the object of adjustment is the attaining-the sampling-the capturing-the processing of information), actional (when the objective of the correction-reaction consists of interventions within some phenomena, activities or events) or decisional (when certain aimed variable consists of the decisional intervention). Moreover, according to the assembly of the variables that might produce an adjustment loop, we assert that the feedback may be unique (when it comes to one variable) and multiple (when several variables are taking into account). From this perspective, in a system even more feedbacks may be traced or detected.

Considering the direction the feedback operator acts towards, in relation to the tendency of the state following the present equilibrium state of the system, the negative feedback and positive feedback are set out (“negative” and “positive” designate the sense of the action of the feedback operator). The negative feedback preserves, stabilizes and integrates the movement from the initial state to the new amplified state (Golu, 1975, p. 63). Jay Forrester has identified two types of feedback too: negative and positive. By the positive feedback “increases or decreases” are obtained (1979, p. 27). The negative feedback, considering the variables number that it refers to, may be of 1st order or linear (when there is a single variable and a single loop) or of a bigger order, not linear (of the 2nd order – with 3 loops, of the 3rd order – “with five loops” – 1979, p. 113).

Valentina Marinescu assess that one may talk about a feedback *to the source* (when the message and its enunciation are controlled by the emitter itself) and the *feedback to the recipient* (consisting of the reactions and the actual response to the message) (Marinescu, 2003, p. 91). Agreeing with Valentina Marinescu’s opinion, Nicolae Balaşa and Simona Ştefănescu have noticed a connotation that particularly, the concept of feedback attains it in communication: by positive feedback the continuance of the communicational approach is approved and encouraged, and by negative feedback signals and clues of interrupting or of altering the approach are generated (Bălaşa, 2005, p. 25; Ştefănescu, 2009, p. 48).

The feedback tells us, by the response reactions, about the way our messages are receipted, received and interpreted. According to the communication type it appears in, J.E. Hullet asserts, the feedback may be: interpersonal, intrapersonal, inter-group (Apud Silbermann, 1981, p. 29). The same thing is the approvals or the audience applause in a conference. If in interpersonal communication the feedback takes place spontaneously and allows the direct adjustment of the communicator’s behavior (noticing the pre-speaker reactions, he senses directly the messages effects), in the mass communication, the recipients’ retroaction couldn’t be directly noticed (Drăgan, 1996, p. 19).

Noticeable is that every communicator has a self-feedback, consisting of the corrective reaction of his own mistakes in expressing himself or writing, even during the elaboration process. The examining “from outside” of the own behavior has the same role (Badea, in Mitrofan, 1997, p. 300). The man as a system produces

operations of body feedback (Seamon, Kenrick, 1991, p. 366), the latter could become the hetero-feedback, when someone's body reaction, another subject will find or give a significance.

Among self-feedback we can place what Paul Popescu-Neveanu (1978, p. 265) and Mihai Golu (1975, p. 294) called *external feedback* and *internal feedback*. According to the complexity level of the operations performed by the control mechanism, there are distinguished: *simple feedback*, that only consists of operations of comparison between the value of the adjusting size and the real value of the output size, and *complex feedback*, that performs in addition other operations, such as the selection ones, of correlating the elements retained in the memory system along the actual ones.

A special form of feedback is the *communicational feedback* and the *therapeutic feedback*. In Emilia Parpală's opinion, "the inverse connection accomplished by the participants to the oral communication is opposed to the unidirectional pattern of the operating of the written channel" (Parpală, 2009, p. 79). In communication domain, the members of the Palo Alto School introduced the concept of feedback, so that it may be asserted that this is one of the major contributions to the conceptual dowry of communicology and psychotherapy. Any system is made of objects (elements), their attributes (properties), and the relations between the objects. "By its nature – Watzlawick asserts (Watzlawick *et al.*, 1972, p. 119) – a system consists of an interaction". The human interaction may be described as a communication system, with the next features: time variability, system-subsystems relation, integrality, feedback and equifinality. The feedback is mentioned as an element in the psychological processes from the social systems called family, too. The invisible college conceives the family as a system ruled by regulations. The assumption is that the system benefits from a family homeostasis. The stabilization in defining a relationship leads to a rule. In absence of feedback the family systems reaches to disequilibrium, making necessary the psychotherapist's intervention. His first task is to identify the factors of the system and to reinstall the feedback.

6. FEEDBACK NETWORK

In Jay Forrester's opinion, "any system consists" of many feedbacks, and these are "interconnected" (1979, p. 132). Rightfully, one can talk about a "feedback network", in which an important part is played by the verbal feedback (Dilts *et al.*, 1980, p. 271). Within the network, as reaction forms of adjusting the system, in order to achieve a structure of objectives, the feedbacks may occur serially or in parallel. So that, it is possible that at a certain point, in the system, should be active sets of convergent or divergent feedbacks, in relation to one and the same variable. It is established that, when the variable in question consists of a decision, this "decision process may belong to more feedbacks" (Forrester, 1979, p. 132).

The feedback analysis should, consequently, take into account the existence and the potential of contradiction or of mutual asserting of feedbacks. The triggering feedback factor is the analysis of determining a discrepancy between the aimed state of the system taken as a whole or as an element of it, and the attained state. The analysis may be planned or fortuitous, may be generated by an internal decision or by a necessity to adjust to the environment of change. The feedback is expressed by reactions; these may consist of evaluations, reports, polls, comments, standings, alterations of intentions, opinions, attitudes, conduct or behavior, vision changes, structure reshaping or trend changes.

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REZUMAT

Studiul se situează la intersecția psihologiei cognitive cu teoria comunicării. El se înscrie în efortul contemporan de dezvoltare categorială a unor experiențe în vederea obținerii de instrumente consubstanțiale fenomenelor și proceselor asupra cărora, investigativ, se preconizează a se interveni cu ele. Pentru configurarea unui concept viabil, clar și distinct de feedback se analizează opiniile relevante, se confruntă pozițiile contradictorii și se realizează reconstrucția istorică, psihologică, sistemică și comunicațională a acestui construct teoretic. În general, se desprinde, orice proces sistemic, cognitiv sau cogitativ, subîntinde legic o conexiune feedback. Finalmente, se concluzionează în legătură cu definirea feedback-ului drept instrument euristic de reglaj specific sistemelor finaliste. De asemenea, se delimitează parametrii (laturile), momentele, nivelurile, funcțiile și tipologia feedback-ului și se constată funcționarea în cadrul sistemelor a unor rețele de feedback.