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Resumo

Neste artigo, estão ilustradas as origens da Cibernética de Segunda Ordem, e estão ligadas à circularidade: uma característica de base para a formação do campo da Cibernética. As implicações da nova análise que os cibernéticos de segunda-ordem dão início são consideradas em termos de dois conceitos que Wiener deu à Cibernética: controle e comunicação. Finalmente, a análise é aplicada em outro conceito cibernético: propósito. Isto mostra o porquê de os conceitos de *goal* e propósito devem ser radicalmente reconsiderados na Cibernética de Segunda Ordem.

Origens

Neste trecho inicial, o autor mostra as origens do termo Cibernética de Segunda Ordem.

"Second-order Cybernetics, the Cybernetics of Cybernetics (or even the New Cybernetics) was given form between approximately 1968 and 1975, at a strange stage in the history of Cybernetics." [3º parágrafo]

"By 1968, conventional Cybernetics was beginning to run out of steam (and credibility).The Cybernetics of Cybernetics could be seen as a rescue operation." [nota de rodapé 1]

Caracterização

"The Cybernetics of Cybernetics is Cybernetics examined in a cybernetic manner (according to the cybernetic critique)." [5º parágrafo]

O autor retoma a definição que Hanz von Foerster faz em seu livro *Cybernetis of Cybernetics*:

"First Order Cybernetics is the Cybernetics of observed systems.

Second Order Cybernetics is the Cybernetics of observing systems." [6º parágrafo]

"The essential discovery of the treatment of Cybernetics as revealed through cybernetic analysis and of the duality observed/observing systems is the presence of the observer." [7º parágrafo]

Comentário: A Cibernética de Segunda Ordem é o campo em que o observador é considerado como parte do sistema, e não se mantém como um observador externo, ou seja, excluído do sistema.

Circularidade [circularity]

"Cybernetics has always been interested in the circularity in which the observer (used as a general term to cover agency) observes what is happening in some system and acts on that system." [8º parágrafo]

"In classical (first-order) Cybernetics this was presented through a power relationship. The observer was seen as acting on the observed, but the observed was not understood to act on the observer." [9º parágrafo]

Comentário: Neste ponto, o autor faz uma crítica aos primeiros cibernéticos, no momento em que se propõe a explicar os conceitos de controle e comunicação "quando a circularidade é levada a sério": na Cibernética de Segunda Ordem.

Controle [control]

Glanville dá um exemplo simples e claro de como o controle funciona se aplicada a circularidade em um sistema: um termostato.

"(…) a switch on the wall of a room which senses the temperature in the room and turns on and off a boiler that creates and distributes heat to that room. In classical (first-order) cybernetic terms, the switch controls the boiler." Porém, aplicando a circularidade "a sério", temos: "So the switch controls the boiler, turning it on and off, while the boiler supplying the heat to the room in turn turns the switch on and off. Here we have circularity." [14º parágrafo]

"If control is circular, where is it? And, in the simplest case where there is a control and a controller, which is which? I believe you can see that control can be neither in the controlled nor in the controller, but lies between them: it is shared." [15º parágrafo]

Comunicação [communication]

"Cybernetic systems need communication for control to be exercised. There is no feedback that is not communicative in intent, and control intent has also to be communicated. Communication is, therefore, necessary to the exercise of control, and therefore to cybernetic systems." [18º parágrafo]

Comunicação como um processo reflexivo: a teoria da conversação de Gordon Pask.

"In Pask's version, understandings are not transmitted. Communication takes place between entities that build understandings out of their interpretations of what they sense their conversational partner offer them. This understanding is feedback to their partner(s) in new offerings that the partner(s) in turn interpret and compare to their original intention. This dual generation of what might have been called messages constitutes feedback and allows errors to be detected and new offerings/messages to be tendered that attempt to correct such errors. This is a complex model that operates both as communication and as communication about communication, simultaneously; where communication takes place between the communication partners so that meaning, in so far as there is any, is uniquely constructed by each partner individually." [23º parágrafo]

Propósito [Purpose]

O papel do própósito nos sistemas cibernéticos é fazer com que o sistema funcione: "So from the earliest days, cybernetic systems have been discussed in terms of purpose. Having a purpose requires that there is this said goal towards which a system can be seen to aim, the attainment of which achieves the system's purpose. Being in some state and wishing to remain in that state may also involve a goal, and the purpose of such a system is to remain as it is – that is, the state it is in is the goal state."

A separação entre propósito e sistema, na Cibernética de Primeira Ordem: "What is critical here is the separation (in the observations made) of the goal from the system so that it remains desirable, that is, the system is seen by the observer to have a purpose. Using a spatial metaphor, the goal is observed to be outside the system, and even though the two may come together, they retain this separation. The connection between the two elements, system and goal, is provided

(observed) by the observer who thus generates from the behavior of the one towards the other a sense of purpose."

Na Cibernética de Segunda Ordem, não existe mais tal divisão: "(...) there is no longer the separation of the goal and system from the observer that there had previously been, and which was deemed essential to the determination by the observer that there is a goal.

Na realidade, na Segunda Ordem não há mais necessidade de se haver um objetivo: "The determination that there is a goal, which was determined to be constructed through the separation of the observer from the system and goal, may be attributed to the (first-order) view of the observer as external, detached and untouched: whereas in the second-order cybernetic view the observer is not external, and so the necessary criteria for the determination of the goal do not exist. If there is a goal, if the system has purpose, it is not visible to us as such in a second-order cybernetic system, though it may be observed to have both when observed as a first order system."

"Goal and purpose are, then, characteristics of first-order rather than second-order cybernetic systems. This discovery is surprising and unnerving, for cybernetics has often been regarded as the study of purposive, goal-directed systems, which cannot be assumed in the case of second-order cybernetics."

Comentário: Esta última declaração é, certamente, provocativa, pois Glanville afirma que as bases da cibernética não são mais válidas para a segunda fase desta ciência. Isto é definitivamente instigante, pois nos leva a buscar novos caminhos para entender o que realmente significa o "estudo dos sistemas de propósitos, de objetivos direcionados".