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### **THE INFORMATIONAL FOUNDATION OF THE HUMAN ACT**

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# Chapter 1: Bases to an informational theory of the human act

## The human act in context

We find the term “act” and its derivations; “action”, “actual”, “actuality”, “change and movement”, “living”, “existence”, “labor” “praxis”, etc., at the center of the history of the philosophy of the 20<sup>th</sup> Century. The concept “act” which appears in the metaphysics of Aristotle and then in the metaphysics of Scholasticism, from Latin *actus* “a doing or a driving, impulse; a part in a play” and *actum* “a thing done,” “to do, set in motion, drive, urge, chase, stir up”<sup>1</sup>, is a basic concept to understand intentionality, technology and labor and any other concept that implies movement whatever intellectually or physically. In the Greek of the New Testament the word *ergon* is used to mean: “an act, deed, thing done” and related meanings. In the same context the word *praxis* is used to mean “a doing, a mode of acting, a deal, a transaction; the doings of the apostles; a thing to be done, business.”<sup>2</sup> Just because of its semantic amplitude this term and its related forms are problematic. Aristotle recurred to the term “actuality” to define change and movement as the consequence of the confrontation of substance and form. The first is general the second particular. Now, there is one class of existent things which

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<sup>1</sup> Online Etymology Dictionary.(2011-05-08).

<sup>2</sup> The New Testament Greek Lexicon

<http://www.searchgodsword.org/lex/grk/view.cgi?number=2041> (2011-05-15).

we will call substances, including under the term: first, *matter*, which in itself is not a this or that, not a particular; second, *shape* or form in virtue of which it is then a this or that, a particular; third, the composition of the two. Matter is potentiality; form, actuality. And “actuality” is used in two ways: knowledge illustrated the one, exercise of knowledge the other.<sup>3</sup> Aristotle introduces then, indirectly, a difference between “knowing” and “exercising knowledge”. “Aristotle’s terminological distinction in this regard is between *poiesis* as a kind of productive activity related to what is outside the agent and *praxis* as the activity concerned with the life (*bios*) of the human agent (Aristotle 1962: 1140 b 3-4). The knowledge about how to produce something outside the agent is called *techne*. In other words, *techne* and *poiesis* – the knowledge on how to produce something external to the agent and the production process itself – correspond to *phronesis* and *praxis*, i.e. to the knowledge about good life and the activity of good life itself.”<sup>4</sup> To act for Aristotle, is a property of the living and implies the involvement of the soul. Following Aristotle, it is possible then to affirm that knowledge is formal and actual and that there are two modalities of it: knowledge as thing, and knowledge as acting. Putting this in our words, we can say that Aristotle uses the term “actuality” to define knowledge and *praxis* (as exercising knowledge).

Marx uses the term “labor” (*Arbeit*) to denote the economic manifestation of an act, emphasizing the semantic associations between the concept of “labor” and the subjective feelings associated

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<sup>3</sup> Aristotle. The Anima Book II. Published in Aristotle’s De Anima in Focus. Michael Durrant (editor). Routledge 1993; p. 21.

<sup>4</sup> Rafael Capurro; “Toward a Comparative Theory of Agents”: <http://www.capurro.de/agents.html>

to pain and fatigue which are not semantically associated to the term “act”. The term “labor” is a derivative from Latin *laborem* meaning just this “hardship, pain, fatigue”. As a verb the term means “perform manual or physical work; work hard; keep busy; take pains, strive, endeavor”. The term “act” at the other hand, means “something done, deed, action,” the term is closer to the English term “work” which comes from Proto-Germanic *werkan*; for instance, the denomination “working class” is from 1789.<sup>5</sup> This unnecessary distinction between labor and acting, led the work of Marx and the work of the philosophers of economy in general, to unnecessary difficulties. Marx purpose was that to explain the mechanisms of capitalism and in this attempt he emphasized the role of industrial acting over any other form of acting. As it was noticed by Hannah Arendt, for Marx, not all acting was interesting, the part of the industrial acting which was really interesting for him was the part which was not remunerated; that part that was appropriated by the capitalist. He called this no remunerated part of work “surplus labor”. The concept of surplus labor is important for the Marxian theory of exploitation of the worker by the capitalist as the source of the creation of new capital. We believe that this circumstantial fact has contributed to the misunderstanding of the creative powers of acting in general.

Searching carefully in Marx’ texts we found that Marx acknowledges two groups of labor-acts. For instance, in Book III of Capital he distinguishes between “universal labor” and “co-operative labor”. The first category includes “all scientific labor, all

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<sup>5</sup> Online Etymology Dictionary.

discoveries and all invention” and is based in both the “the co-operation of the living, and partly on the utilization of the labors of those who have gone before”. The second “is the direct co-operation of individuals.” Work and labor then in the economic sense of the word would be the co-operative form of action. Let see how Marx explains this:

Incidentally, a distinction should be made between universal labor and co-operative labor; both play a role in the process of production, both flow one into the other, but both are also differentiated. Universal labor is all scientific labor, all discoveries and all invention. This labor depends partly on the co-operation of the living, and partly on the utilization of the labors of those who have gone before. Co-operative labor, on the other hand, is the direct co-operation of individuals. The foregoing is corroborated by frequent observation, to wit: 1) the great difference in the cost of the first model of a new machine and that of its reproduction. 2) The far greater cost of operating an establishment based on a new invention as compared to later establishments arising *ex suis ossibus*.<sup>6</sup> This is so very true that the trail-blazers generally go bankrupt, and only those who later buy the buildings, machinery, etc., at a cheaper price, make money out of it. It is, therefore, generally the most worthless and miserable sort of money-capitalists who draw the greatest profit out of all new developments of the universal labor of the human spirit and their

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<sup>6</sup> [from their very bones].

### social application through combined labor.<sup>7</sup>

From Marx' words can be deduced that he believed that the development of new embodiments (prototypes) includes the labor of earlier generations and therefore includes much more labor than a standard produced artifact which only consumed the labor of the actual generation of workers. From Marx words can also be deduced that this "universal labor" is the theoretical and praxical knowledge that has been inherited from the experience of earlier generations. As Marx shows, the first implementations of new technologies imply always very high costs. These costs originate in the necessary succession of decisions, which are tentative and prone to be wrong. The trial and error method, which is the natural way to implement new technologies, consumes much more labor than well-known processes.

### Kinetic respective telekinetic acts

"Kinetic" acts for us are the acts performed through embodiment. These acts happen both in the lifeworld and in the projective world of "physics"; they are acts with materiality. On the other hand, "telekinesis" is our word to refer to the "mental acts". We understand the term "telekinesis" as the unicity between the subject and the lifeworld manifested as the *directness* of the intentional act.

### Choices and the human act

The common way to classify the human act is that to distin-

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<sup>7</sup> Capital Vol. III Part I. "The Conversion of Surplus-Value into Profit and of the Rate of Surplus-Value into the Rate of Profit Chapter 5. Economy in the Employment of Constant Capital V. Economy Through Inventions." Marx Internet Archive. <https://www.marxists.org/archive/marx/works/1894-c3/ch05.htm>

guish between simple and complex acts. For example, let us study the work of Donald A. Norman. According to Norman everyday tasks shows a simple structure:

Everyday activities are conceptually simple. We should be able to do most things without having to think about what we're doing. The simplicity lies in the nature of the structure of the tasks<sup>8</sup>

Norman distinguishes between wide and deep action structures which he represents as the sequences of a decision tree. An example could be the study of the game of chess:

The sequences can be represented on a decision tree, a diagram that in this case takes the current board position as a starting point and shows each of my possible moves, each of the possible countermoves, each possible counter-counter move, each possible counter-counter-counter move, and so on, as deep as time and energy permit.<sup>9</sup>

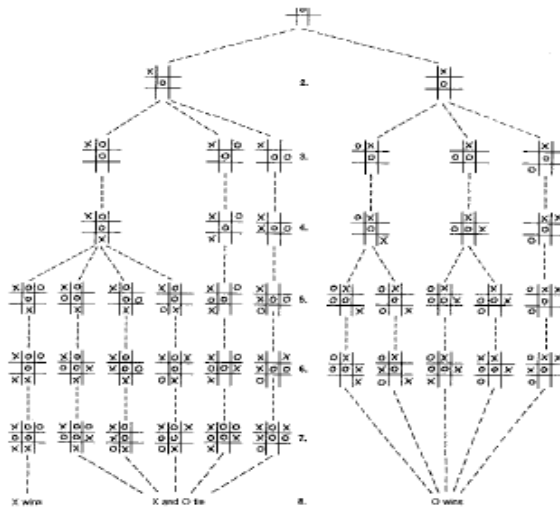
The diagram of the decision tree of the game of chess is wide in the sense that for each choosing moment there are many open alternatives and it is deep in the sense that the consequences of each choice have far-reaching consequences. A simpler case is the game tic-tac-toe which is presented by Norman as follows:

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<sup>8</sup> Norman, Donald A. *The design of everyday things*. The MIT Press; London, 2001; p. 119.

<sup>9</sup> Ibid. p. 119.





Presentation 1: Decision tree of the game of tic-tac-toe according to Norman.

[...]

### Studying complexity

Decisions in connection to acts create what we will call “organizational value” as bits that express order, which can be represented as series of 0 and 1 in a decision-tree. The organizational value intrinsic to human acts is related to decisions that either select an act in the same level of acting (horizontal decision-tree) or decisions that open for an act in another level of acting (vertical decision-tree). In the first case the act increases the amount of organizational value by repetition; in the second case the amount of organizational value increases by complexity. To study the concept of “complexity” we will use spatial references. Complexity in acting is achieved moving from the large to the little, from the unspecific to the specific, from the general to the particular. Each decision opens

a space of new possibility that increases the amount of order by adding new options-choices on that level that accumulate with previous ones. Notice that the everyday world is organized in levels of size among which the size of the human body is the natural point of reference or first level. That allows us to assemble the human acts in groups of frequencies of 0 and 1.

Drawing from the frequency interpretation of probability developed by von Mises<sup>10</sup> and taking into consideration neighborhood relations, Popper<sup>11</sup> presented the concept of freedom in finite classes of occurrences of binary events. We will use this concept to describe the level of complexity of acts. A sequence of occurrences is said to be 1-free if it is insensitive to selection according to a single predecessor, i.e. if the resulting frequency (probability) does not change when taking all elements succeeding a 0 or a 1. Similarly, sequences can be 2-free, 3-free ...n-free depending on the number of predecessors that the sequence is insensitive to selection. A sequence is 0-free if any selection from any number of predecessors results in a constant sequence of 0s or 1s. A 0-free sequence is therefore predictable and presents a high level of organizational value. We argue that human acts present levels of freedom that are equivalent to Popper's description of freedom. Namely, each decision will increase in one unit the complexity of the act characterized by the sequence of occurrences that it represents. Higher values of freedom correspond to higher levels of complexity and higher levels of informational value, and lower levels of predictability and organi-

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<sup>10</sup> von Mises, Richard. *Probability, statistics and truth*. MacMillan; New York, 1957.

<sup>11</sup> Popper, Karl R. *The logic of scientific discovery*. Hutchinson; London, 1980; p. 159.

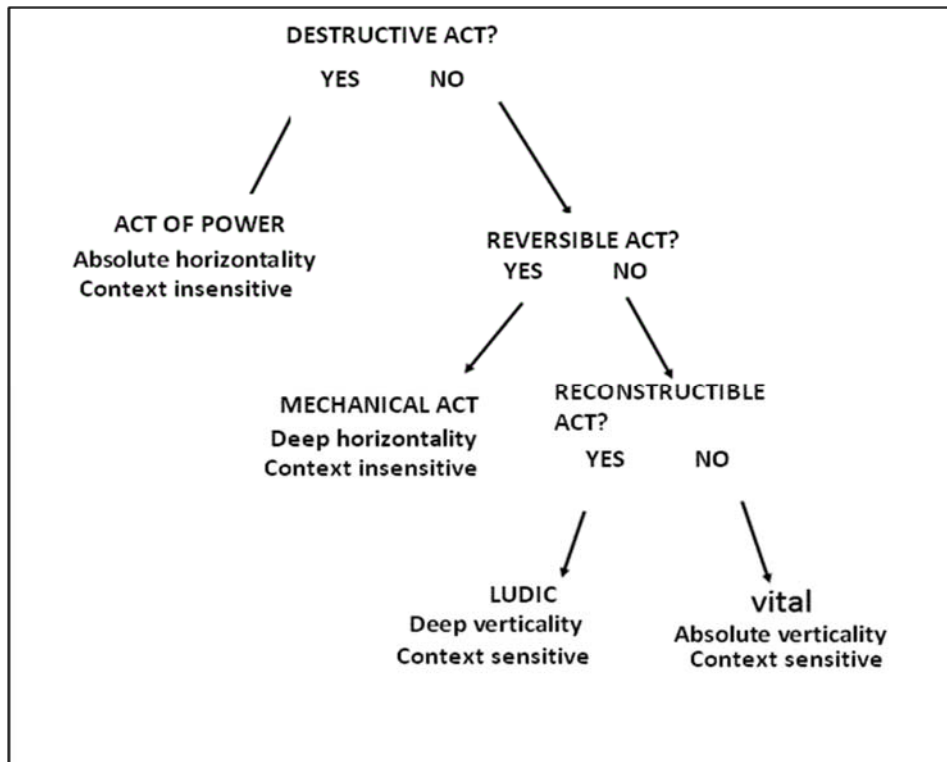
zational value. Acts can therefore be set on a continuum according to its complexity in correspondence to the human and social levels of acting.

Degree of freedom in different levels of lifeworld complexity							
← Decreasing complexity Less information More predictability More order				Increasing complexity → More information Less predictability Less order			
Micro-level. Non-visible by the eye.	The level of the human finger	The level of the human hand	The level of the human body	The social level of a building	The social level of a city	The social level of a country	ideas, emotions, feelings, desires
0-free	1-free	...	10-free	...	10 <sup>3</sup> -free	10 <sup>6</sup> -free	∞-free
Presentation 2: The scale of freedom of decisions							

[...]

### A relational theory of human acts

There is another aspect in the study of human acts that complement the study of its complexity. We are referring to an act's relation *to other acts*. Let us present a general methodology to analyze the relational aspects of human acts. We will ask us if acts are *destructive, reversible or reconstructible*. Each answer will give us a family of acts as follows:



Presentation 3: A relational theory of human acts.

We call these acts *abstracts* acts different from the real acts that we will study immediately after. Let us study these abstract acts independently from each other.

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