Imaginative Animals.

Leibniz's Theory of the Mutual Development Between Language and Thought

The book enquires into Leibniz's theory of how human minds constitutively depend on senses and imagination. Leibniz claims that "human beings tend to explain through things subject to the imagination also those things which cannot be imagined" (homines etiam ea quae imaginari non possunt per res imaginationi subjectas explicare conantur. A VI 4 A 890). A narrower outcome of this thesis is Leibniz's claim that reasoning, i.e. the human capacity for inferential knowledge and logic, could not have been developed by human minds without the use of a system of signs ruled by syntax and semantics: a language. The inquiry into Leibniz's explanation of rational processes culminates in the thesis, defended in the book, that Leibniz endorses a mutual development between language and thought which allows to articulate an ontogenetic and phylogenetic developmental history of human beings' knowledge acquisition.

Leibniz maintains that human beings are subject to an historical order of knowledge. Human beings first develop knowledge related to sense-perceptual domain. Afterwards, they acquire knowledge of what is imaginable (mathematics and natural kinds' concepts). Only after having developed knowledge in those domains, can human beings develop morality and metaphysics. Leibniz believes to be able to prove that this order describes a phylogenetic history of human kind's cognitive development through a comparative study of etymology in different natural languages independently developed. Etymology shows that human beings rely on figurative speech, viz. metaphors, when they have to design new terms which refer to abstract domains, like metaphysics, which are not subject to the imagination. Six Chapters of the book demonstrates that Leibniz's linguistic research, as well as Leibniz's theory of the necessity of language for reasoning are guided by a complex theory of human rationality, which, I argue, tries to explain a range of cognitive phenomena: conceptual development and language acquisition; the human capacity for cooperation; the ascription of propositional attitudes; perceptual processes; conceptual errors, and the endorsement of false beliefs.

The dependence of human minds on senses and imaginations is articulated by Leibniz in response to the most influential view of his time: Descartes' transparency thesis. The confrontation with Descartes culminates in the denial of the transparency thesis: To have a thought (i.e. perceptions, images, emotions), a mind must be conscious of an idea, i.e. an intellectual content. Introspection of

ideas allows minds (i) to know what the thought is about (intentionality); (ii) to know towards which things in the world the mind is directed.

Leibniz develops an anti-Cartesian theory of human cognition grounded in sense-perceptual processes and imaginative mechanisms which do not require transparency. Sense-perceptions are for Leibniz cognitive processes which express and keep track of environmental affections on an organic body's sense organs and its emotional responses to the environment. Imaginative processes are more sophisticated mechanisms of processing perceptual presentings acquired through interactions with the external objects over time. I call these internalized rules "image-types" which are nothing but ways of tracking regularities and the coherence of phenomena in the world. Neither perception, nor image-types require consciousness of ideas to be directed towards external objects. Moreover, when memory and attention become selective (i.e., more focused on some aspect of the object), they are controlled by the subconscious work of image-type mechanisms. The spontaneous tracking of regularities of objects accounts for a mind's expectation and prediction of objects' kind-behaviors (e.g., I expect a human head to not turn of 360° if attached to a human body). The result is, thus, a different theory of innate ideas: innate ideas are not dispositional innate mental capacities to form some contents; they are mental constraints and mechanisms naturally active in processing perceptual presentings.

Based on this more naturalistic theory of cognition, the rest of the book enquires into how these mechanisms underpin language acquisition and the origin and development of concepts. Image-types, I argue, can account for the triadic relation I-Thou-World necessary for language acquisition without the necessity of reflective knowledge (I know that you know). Moreover, image types can account for quite sophisticated everyday language use. But while image types cannot account for scientific and logical reasoning, this is because the type of reasoning proper of logic and the sciences require conceptual engineering: the expression of the natures (essences) of things through definitions.

An essence can have an infinite number of nominal definitions, but only one real definition (the latter of which finite minds cannot know). Few nominal definitions support human logical inferences and scientific enterprise because: (i) Few nominal definitions represent the nature of the thing (water as H_2O better identifies water in a chemistry lab than the definition of water as a transparent fluid, for instance); and (ii) few nominal definitions support logical inferences and scientific enterprise (MAN can be defined both as an *animal capable of laughing* and *a rational animal*; only the latter definition explains a wider range of phenomena, such as *man* as *capable of speaking*, *doing logic*, *laughing*. Therefore, it is more effective and must be preferred over other definitions in the sciences).

The basic idea is that there is a division between cognitive tasks which may be supported by image-types, and other, higher-order tasks, like logic or the sciences, which require concepts. Since concepts are more abstract, they are explicitly cognized later in a human beings' ontogenetic life. Concepts are acquired after human beings learn to master a language, because the structure of concepts, i.e. definitions, requires a syntactically and semantically ruled system of signs. Due to the cognitive dependence of minds on senses and imagination, a language system based on internalized, habitual rules of thought-expression grounds the expression-relations between the definitional marks of concepts. Concepts and intentionality are a complex, high-structured phenomenon which appear late in human beings' ontogenetic and phylogenetic history.

Abstract Chapter 3.

In this Chapter, I argue that Leibniz denies Descartes' transparency thesis. Transparency means that to have a thought (i.e. perceptions, images, emotions), a mind must be conscious of an idea, i.e. an intellectual content. Introspection of ideas allows minds (i) to know what the thought is about (intentionality); (ii) to know towards which things in the world the mind is directed. More specifically, Leibniz contest that human beings are capable of introspective Cartesian clear and distinct ideas.

The denial of a pure intellection pushes Leibniz to answer the question of the directedness of the mind in terms of *expression*-relations and to attribute a new outstanding role to the imagination. Expression is for Leibniz an analogy relation between the parts of a thing to be expressed (*exprimendum*) and the parts of its expression (*exprimens*). Examples are a machine and its model, a geographical region and its map, thought and language. Expressions have cognitive advantages over their *exprimenda*: they are simpler than the things to be expressed and can therefore improve reasoning on those *exprimenda*. (Drawing a machine model on paper can make its construction easier than starting with pieces.) If it is not in virtue of the cognition of an idea that the mind picks out objects in the world, Leibniz has to find a different answer to the question how expressions become expressions *of x*. To explain the reference relation between *exprimendum* and *exprimens*, Leibniz needs to distinguish two particular expression-kinds: image-types and concept-types. It is the natural habitual relation proper of image-types which make them a necessary pre-stage to acquisition of concept-types.