

Chapter 1

Articulation and Translation of Meaning

ABSTRACT

Notions of articulation and translation pertain to a great deal of concepts and events described in this book such as communication, cognition, and computing, so they will return as themes for discussion in chapters that follow. It seems particular areas of interest associated with ostensibly unrelated disciplines may have some common features. Both the articulation of units and translation of a meaning or a structure may hold common traits. Inquiring into concepts of articulation and translation may be considered the way of exploring the meaning. The articulation is discussed as units combined into complete structures and thus meaningfully formulated. The further text includes examples of double and triple articulation of signs in languages, programs, and several other fields. The concept of translation—another common thread interweaving distinctive processes and events—may include translation from nature to art (with the use of technology), as well as many forms of visual, verbal, and numeral translation. Two-way translation is discussed, from nature to idea and production and from products to human perception and creation.

INTRODUCTION

In this book, the meaning of things, concepts, and experiences is examined in several ways, for example in terms of perception, cognition, aesthetics, technology, or art production. This chapter is about the concepts of articulation and

translation as the ways of exploring meanings. The further discussion will return to both concepts in following chapters.

It seems areas of interest belonging to apparently unrelated disciplines might have some common features. It can be assumed both the articulation of units combined into complete structures, as well as translation of a meaning or

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a structure may hold common traits. However it is difficult to assign one common definition to the notion of articulation when it refers to mathematics, geometry, and fractal geometry, computer languages, computer graphics, linguistics, music, telecommunication, architecture, material sciences, medicine, and biology, among other options. Several structures existing in various systems, such as natural or programming languages or biological forms are combined in a set of signs that makes a code. They are thus meaningfully articulated. In a similar way, the concept of translation has various meanings in individual disciplines such as mathematics, geometry, and fractal geometry, computer languages, computer graphics, verbal communication, language arts and linguistics, literature, fine arts, art history, philosophy, phenomenology, molecular biology and genetics, material science, and many technology systems.

ARTICULATION

Articulation Applied in Many Domains

The notion of articulation may assume disparate meanings, so it may lack a common definition. We may spot the concept of articulation in various disciplines and areas of life. We may say that articulation happens when we assign a form (in words, notes, or algorithms) to an idea, information, or a feeling. Many of the meanings relate to linguistics where articulation may refer to putting an idea into words by the marking of information in a clause. In human speech articulation may mean the clarity, sharpness, and expressiveness of one's pronunciation and a way of uttering sounds, but also the way individuals adopt cultural forms and practices that are characteristic of their social status. As linguistics, the science of language concerns with several domains such as phonetics, morphology, syntax, semantics, phonology, pragmatics, and historical study, articulation may

take a specific meaning for a particular context. Musicians articulate multiple notes or sounds supporting their continuous transition. When it comes to telecommunication, specialists measure the intelligibility of a voice system as the articulation score. Instructional designers and educators articulate curricula by comparing the content of courses between colleges and universities. Architects use the notion of articulation to describe the styling of the joints as the formal elements of design. The term articulation is also used to denote mechanical properties of parts joined into a whole. For example, the articulation in anatomy tells about the ability of flexing limbs where two or more bones make contact; in a similar way, axle articulation in engineering means a car's ability to flex its suspension: pivoted joints are articulated or hinged. In botany as a study of plant life, types of joints between separable parts, as a leaf and a stem, are described as articulation. In a graph theory, the articulation points of a graph are vertices in this graph.

Articulation of Signs in Natural and Programming Languages

A collection of signs used to communicate or to express something can be combined in a system and make a code, simple or double articulated one. Semioticians use the term articulation with reference to a code structure applied in structural linguistics (Martinet & Palmer, 1982); they are studying signs, relations between signs and meaning, codes, and communication related cultural events. Roland Posner (1992, 1993), a Czech-German semiotician and linguist called the string codes those sign systems that have all complex signs reducible to strings; as examples of sign systems, he included natural languages, writing systems, musical notations, codes related to clothing, culinary codes, and traffic signs. A formal language indicates in linguistics, mathematics, and computer science a set of strings of symbols defined by their structural patterns. Communica-

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