

## ANALYSIS OF THE VISUAL VARIABLES PERCEPTION IN AGREEMENT WITH THE GESTALT LAWS FOR CARTOGRAPHIC REPRESENTATION

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The purpose of the cartographic language is to elaborate the cartographic symbols for the map design, but it also understands the passage of those for a 'new' knowledge, that is the effect produced by the symbol when it is read a map. In this case, the graphic semiology presented by Bertin it didn't discuss as the visual variables urge the passage of the perception to the visual cognition (MACEACHREN, 1995) . It is known that the location is an indispensable attribute in the visual perception (PINKER, 1984) and it is given by the two dimensions of the plan that defines the represented space. Bertin comments that variables that are put upon to the location exist. With the aim of understanding the process of map communication from the user's perspective, Bertin's Graphic Semiology theory was used, that proposing to the graphic representation the principles of cartographic language. In this cartographic language there is the subject (S) and object (O) to the construction of map reading. In this case, who performs and use the map (S) share the same relations observed in the object (O) to build and transmit the information. In particular, this theory establishes that the human eye is able to isolate the visual variables group them and understand them according to location and meaning, that property is called by Bertin "selectivity", which allows visual grouping. That selectivity property contributes to what he called of two times of perception, that are enough for the reading of the map: where such element is it? What it is means? This is translated in an association among grouping, given by the visual variable, and your relationship with the mental domain. This proposition of Bertin was not still verified, according to MacEachren (1995). To verify this property, visual variables as form, value and orientation was applied to graphics primitives point and line. On the other hand, the Gestalt laws (proximity, similarity, prägnanz) help to understand the formation of these visual clustering. Based on these theories tests were elaborated with open questions. Thirty six volunteers participated in this research (sixteen students on the first year of undergraduate in Geography, six students on the fourth year of undergraduate in Geography, ten students on the third year of undergraduate in Biology, four students on the first year of undergraduate in Tourism). We used the qualitative method of evaluation proposed by Suchan & Brewer (2000) . This method allows embedded assessments in the context of groups of people, which they could keep the focus of research, defined as the objectives of the study to be undertaken. Finally, as analytical tools used by participants in the development of tasks, took advantage of thematic maps (mineral resources, rural establishment and units of conservation) of the constituent elements of the maps presented. From the results, we can conclude that: proximity is a key element in the formation of grouping, but similarity is the factor that imposes the formation of unity. To build the image with a specific form (and orientation) different precedence indicated by Bertin, as an associative variable. Despite the formation of groups the people can not separated them; there are no similarities between them. For the value, which is a variable dissociative, allows to separate and form groups by similarity, as Bertin proposed. The laws of good continuity and closure attend, but the results did not show their influence on the selectivity. These results are associated with primitive graphics point. With respect to variable line, the tests were inconclusive, but indicated that it is an element that influences the formation of groups.