Christaller's central place postulates
A commentary

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Abstract. The purpose of this paper is to trace back and comment on five postulates of Christaller's central place theory: the homogeneity of geographical space, economic rationality of agents, existence of scale economies, existence of agglomeration economies, and interdependence between goods. The conclusion of the discussion is that the lack of an explicit axiomatic approach prevents the theory from being consistent and fully immune to empirically based puzzling comments.

1. Introduction

Just before the first world war, Walter Christaller started to study philosophy and economics. This would presumably have some influence upon the deductive orientation of the doctoral research on central places in Southern Germany that he conducted under the geographer Gradmann in Erlangen during the years 1929–32. Although the deductive scientific approach was almost unknown among geographers at the time, Gradmann supported Christaller's project. The dissertation was published (Christaller 1933) when the author was forty years old. In 1932, Christaller refocused his research on the inductive analysis of German rural settlements (Habilitationsschrift 1938). He left academics after a short career of only ten years, 1929–38 (Hottes 1979). His theory of central places remained largely unknown for several decades. Its significance was not recognized in geography and the social sciences until a few years before Christaller's death in 1969.

The concern of this paper is only with Christaller's master piece on central place theory (Christaller 1933); all the quotations from that book refer to the English translation by Baskin (Christaller 1966) which is more readily available. A well-documented positioning of Christaller's contribution to the 1925–35 Ger-

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man debate can be found in Ponsard (1983). Christaller’s central place theory has largely been commented on. Beyond numerous criticisms, most authors agree in recognizing that his simple theory “succeeds in analyzing and explaining an essential feature: a functionally hierarchic system of central places on a completely homogeneous plain” (von Böventer 1969, p. 117).

Christaller’s aim is to explain the existence of a hierarchical urban system using a deductive theory. The question raised in this paper is about identifying the fundamentals of his theory and the way they are considered as a basis for subsequent derivations. More precisely, my purpose is to trace back some of the basic postulates supporting Christaller’s theory. Are they explicitly or implicitly stated in his book? What is their impact on the formulation of his theory? How efficiently are they used? Section 2 recalls the general scope of Christaller’s contribution. His postulates are dealt with in Sect. 3, while related additional comments are provided in Sect. 4. Conclusions are drawn in Sect. 5.

2. Christaller’s purpose and theory

Christaller’s purpose is clearly to build a deductive theory based on economic factors that is able to explain the spatial structure of a central place system, and then to test the theory using the case of Southern Germany.

2.1 Toward economic-geographical laws

Quite soundly, it is from the very beginning of his book that he formulates the questions he intends to address: “why are there, then, large and small towns, and why are they distributed so irregularly?” (p. 1). More precisely: “how can we find a general explanation for the sizes, number, and distribution of towns? How can we discover the laws?” (p. 2). These questions are restated from time to time elsewhere in the book, and again in the conclusion. It must be emphasized that the explanation about central places should be a general one “because we believe that there is some ordering principle heretofore unrecognized that governs their distribution” (p. 2): such a view was very rare among geographers in 1932. It is not quite clear whether Christaller feels concerned with the existence of towns or only with their number, sizes, and distribution. According to the questions above, the answer should be negative although he alludes to the existence of towns on his page 3 when he writes about “creation, development, and decline of towns” stating that “economic factors are decisive for the existence of towns”; this is not taken any further. Let us conclude that Christaller’s main problem is to explain the sizes, number, and distribution of towns.

Christaller asserts that the answers to his questions must come from theory. He argues that no answer can be given as a result of “purely geographical inquiry” (p. 2) and concludes that “no one has obtained clear, generally valid laws in this manner” (p. 2). Nor can a general answer come from historical investigation or from a statistical method: genuine laws cannot be derived in that way. This explains why the work does not begin “with a descriptive statement of reality, but with a general and purely deductive theory”, which is indispensable “if we are to