*Time-Space in World-Systems Analysis**

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World-systems analysis, pioneered by Immanuel Wallerstein, analyzes large-scale social change over long periods of time and provides a global and interdisciplinary perspective. Its unit of analysis is the capitalist world-economy or the modern world-system *qua* historical system.[1] The concept of historical system is built around the indissoluble link between concepts of time and space. "An historical system is an entity that is neither eternal nor momentary but has a life, and therefore a beginning and an end. The system has a space as well, and its boundaries (themselves changing over time) derive from its fundamental operation principles (which is why it may be called a 'system')" (Wallerstein 1993, p. 11). The world-systems perspective "premises a multi-level, complex system of social action that is comprehensive and singular not only in scope — and so forms a spatial 'world' with its own changing geo-political boundaries — but also in time — and so forms a temporal world with its own irreversible sequences and non-arbitrary periodicities" (Hopkins 1982, p. 148).

World-systems analysis is also a critique of nineteenth-century social science and offers a means of going beyond its legacy. Because, from the viewpoint of conceptions of time and space, one of the most "remarkable achievements" of the epistemology that has dominated the social sciences heretofore has been to talk about time and space in terms of chronology and geography considered as "physical invariants, and

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[1] For an introductory overview of World-Systems Analysis, see Hopkins and Wallerstein (1982), Wallerstein (1991b), So (1990, Part III), Shannon (1989).

hence exogenous variables" rather than as social creations, that is, fundamental endogenous variables crucial to the understanding of social structure and historical transformation (Wallerstein 1991, pp. 2-4).

Fernand Braudel and Multiple Social Times

Wallerstein and world-systems analysts share Fernand Braudel's conception of time, conceived in at least two alternative modes: *L'histoire conjoncturelle* or cyclical history and *l'histoire structurelle* or structural history based on the *longue durée*. This line of inquiry departs from both the idiographic epistemology of traditional history expressed as the narration of events and the nomothetic epistemology of the social sciences articulated in the search for universal laws valid across time and space[2].

Braudel's (1969) major argument in his famous and most theoretical article on history and the social sciences is that time conceived as duration is a social construct and there are multiple social times.[3] He designates these multiple social times as the short term, the time of "events," the medium term, the time of the "*conjoncture*," and the long term, the time of structure. According to Braudel, the short term is the time of *l'histoire événementielle* (a concept coined by Simiand and Lacombe at the turn of the century), usually translated as the "history of events" or, to better capture the spirit of the term, as "episodic history" (Wallerstein 1991a). Other linguistic problems in conceptual translation are faced when rendering in English the term "*conjoncture*" because it refers not to a "conjuncture"[4] but to a phase of a cyclical process: hence Wallerstein's translation, "cyclical history". However, Braudelian cycles are always "cycles *within* something" (Wallerstein 1991a, p. 137) and, therefore, they should not be confused with those referring to the entirety of human

[2] See Wallerstein (1991c, p. 188).

[3] For an accurate English translation of "Histoire et sciences sociales: la longue durée" (History and the Social Sciences: The *Longue Durée*), see the one found in P. Burke, (ed.), *Economy and Society in Early Modern Europe*, pp. 11-42, or use translation in *Social Science Information*, IX, 1970, pp. 145-74.

[4] This kind of translation works in every European language except English.

history as in Toynbee. "That 'something' is what *l'histoire structurelle* refers to" and it is usually translated as "structural history" (Wallerstein 1991a, p. 137). It includes "the enduring structures (primarily economic and social) that determine over the *longue durée* our collective behavior — our social ecology, our civilizational patterns, our modes of production" (Wallerstein 1991a, p.138). Anthropologist Lévi-Strauss conceives "history" and "structure" as an antinomy and this has led to another terminological confusion. Aware of this possible misunderstanding, Braudel describes, a fourth time, the very long term, or eternal time, corresponding to Lévi-Strauss's structure.[5] The very long term, by definition, does not change because it is eternal. "S'il existe, ne peut etre que le temps des sages" (Braudel 1969, p. 76).

From the perspective of episodic history, events occur at a certain point in time and in a certain place. They are short-term occurrences that, "traditional historians" would argue, present some kind of concrete evidence, oral and/or documentary testimony, on which most people would concur. Specific facts (very much associated with political history) tend to be explained by other events occurring in chronological sequence — a chain of causation. According to Braudel (1969) the episodic history mode constrains causal analysis in its emphasis on fine detail and narrow time spans.[6]

In the tradition of *Annales*, Braudel criticizes episodic history as practised by most traditional historians because he finds it misleading.[7] He expresses his strong disagreement through his famous sentence in

[5] Lévi-Strauss's exercise is to discover universal rules that underlie the categories according to which social life is organized. He analyzes these categories to show that there exist the same, unchanging relationships between them across cultures (Lévi-Strauss 1963). Chomsky (1957) shows a similar lack of changes for languages.

[6] An example is "the fall of the Bastille on July 14, 1789" seen as a consequence of the combination of concrete occurrences that led to the so-called event.

[7] The Annales School, associated with the journal *Annales d'histoire economique et sociale*, was founded in 1929 by Lucien Febvre and Marc Bloch. One of the objectives of the group has been to bring together historical studies and social science. Distinguished by their opposition to traditional history, they emphasize the importance of social and economic history and long-term historical trends. *Annales* suggests that the way to respond to a problem is with *histoire pensée* and not *histoire historisante* (that is, analytical rather than chronological history) (Cf. Wallerstein 1991c, p. 187).

the *Mediterranée:* "les événements sont poussière"[8] (Braudel 1966, vol. II, p. 223). Events are dust not only because they are ephemeral but also because they block the real vision and do not allow us to see properly (Wallerstein 1991, p. 138). It becomes necessary to wait for the dust to settle in order to see clearly.

Braudel does not deny the factual quality of events but in order to have a more meaningful understanding of the world he would have us look at "something else", and that something else comprises both the *longue durée* with which he associates the term "structure" and the cycles that mark its evolution. By structure, "les observateurs du social entendent une organization, une cohérence des rapports assez fixes entre réalités et masses sociales. Pour nous, historiens, une structure est sans doute assemblage, architecture, mais plus encore une réalité que le temps use mal et véhicule très longuement... Toutes sont à la fois soutiens et obstacles" (Braudel 1969, p. 50, cited in Wallerstein 1998b, p. 82). Although it is not rigidly defined, the duration of a structure is long, multi-secular. Long-lasting structural elements for Braudel are, for example, geographical elements of the Mediterranean (mountains, sea) and culture (languages, religions, etc.) which constrain human action (Braudel 1966). The medium term of social time is cyclical history. Cycles in the capitalist world-economy usually refer to periods of thirty to fifty years over which there occur the expansion and contraction in population and the rise and fall of prices of products, wages, unemployment, or production per land unit. These cycles move within structures. As Braudel argues, the explanation of an event should take into account both long-term structural factors and *conjonctures*.[9]

In fact, neither the search for the infinitely small (short time) by the so-called traditional idiographic historians nor the search for the very long

[8] In the English edition, this has been translated: "Events are the ephemera of history" (Braudel 1973, vol. I, p. 901). Just as for Braudel "events are dust", so for Prigogine (1996, p. 51) "lorsqu'il s'agit d'interactions *transitoires* ..., les terms diffusifs sont négligeables" (cited in Wallerstein 1998b, p. 84).

[9] For example, to explain an event such as the explosion of violence in East Timor, we have to take into account long-term structural factors (such as the division of the world, colonization, social movements) and *conjonctures* (the beginning of a world economic expansion, the end of the Cold War, etc.).

duration (eternal time) of "universal" truth, which holds across time and space, by nomothetic social scientists, "can be a useful focus" for a meaningful understanding of reality (Wallerstein 1998, p. 83). Although the short and the very long times define most world scholarship in the social sciences, neither make any sense because most scholars assume that time is either a series of discrete tiny entities that exist on some chronological chart with no explanation other than a very immediate one of why the events occur in the sequence that they do; or they assume that everything is the same everywhere, if only we can learn the secret formulas by which we could decipher the seeming differences in forms of material life and the eternal truth underpinning them all (Wallerstein 1991a, 1993, 1997b, 1998a). One denies large-scale constraints; the other ignores the impetus for change implicit in difference. They miss the fact that there are two other kinds of social time. In order to perceive what is going on in the world it is necessary to combine an understanding of the reproduction of systemic characteristics observable in medium-term cycles and the evolution or change in the structures of the system over the long term.

As Wallerstein (1980) maintains, Braudel undertakes a "war on two fronts", against both the idiographic and nomothetic social sciences, the first found mostly in history departments and the latter mostly in departments of economics, political science and sociology. In late nineteenth-century Germany, the divergent orientations to social enquiry (an idiographic focus on historical and cultural particulars and the nomothetic focus seeking universal laws), as, for instance, conceptualized by Windelband (1980),[10] took the form of a methodological dispute, the *Methodenstreit*.[11] The social sciences, faced with the "two cultures" split (Snow 1965),[12] "internalized

[10] See also Dilthey (1988) and Rickert (1989).

[11] On this controversy over the "purpose, properties, method and domain of sociocultural knowledge", see Lee (1997, p. 4) and Oakes (1975, pp. 19-20).

[12] The so-called "two cultures" refer to "philosophy" (or, more broadly, the humanities) and "science". Their division was "virtually unknown anywhere in the world before the middle of the eighteenth century" (Wallerstein 1997a, p.1). Social science, a concept invented in the nineteenth century referred to a body of systematic knowledge about human social relations, "inserted itself as somewhere and somehow in-between" (Wallerstein 1998b, p. 80). For a discussion on the developments of the historical construction and institutionalization of social science, see Lee (1994) and the Gulbenkian Commission Report (1996).

their struggle as a *Methodenstreit*. There were those who leaned toward the humanities and utilized what was called an idiographic epistemology. They emphasized the particularity of all social phenomena, the limited utility of all generalizations, and the need for emphatetic understanding. And there were those who leaned towards the natural sciences and utilized what was called a nomothetic epistemology. They emphasized the logical parallel between human processes and all other material processes. They sought to join physics in the search for universal, simple laws that held across time and space"[13] (Wallerstein 1997a, p.4).

Against positions taking one side or the other, Braudel creates a middle space that is neither the short term nor the very long term. He concentrates on the medium and long term together to offer an alternative mode of writing history. In his book *La Mediterranée*, he analyzes the Mediterranean world according to the short, medium and long term, showing how the interpretation takes a different form each time. He dismisses the very long term but does not deny the existence of the short term, which, however, does not tell the real story underneath but can only describe a small part of historical reality. The necessity of using the medium and the long term together is due to the relation between *conjoncture* and structure. In Wallerstein's language, "cyclical rhythms" constitute the "patterning" of capitalist development.[14] In Hopkins and Wallerstein's words, Kondratieff cycles "are not merely descriptive of historical reality, but constitute a fundamental parameter of the functioning

[13] Physics is associated with Newtonian mechanics that "posited a series of premises and propositions which achieved canonic status in our modern world: systems are linear; they are determined; they tend to return to equilibria. Knowledge is universal and can ultimately be expressed in simple covering laws. And physical processes are reversible. This last statement is the one that seems the most counterintuitive, because it suggests that fundamental relations never change, and that time is therefore irrelevant" (Wallerstein 1998b, p. 80).

[14] "That capitalism operates in cyclical rhythms is perhaps one of the least contested generalizations in the social sciences. Economics as a discipline recognizes as a conventional specialty 'business cycles'. Short cycles are usually seen as a basic mechanism of adjustment of the supply-demand vectors in the market ... Longer-term cycles, commonly known as Kondratieff cycles, are more controversial" (Hopkins and Wallerstein 1977, p. 122). Kondratieff cycles, first formulated theoretically in 1920s, are forty to fifty years long and characterized by A and B phases, expansions and contractions of world economic activities.

of the world-economy. It is these cyclical movements that not only account for the locational shifts which occur within the structure of the world-economy, but also provide the basic dynamic which results in the secular trends of the social economy as a whole" (Hopkins and Wallerstein 1977, p. 123).

Wallerstein, elaborating on Braudel's concept of structure, argues that the "historical system" is the entire structure, whose processes (reproducing the system over time) exhibit both cyclical rhythms (medium-term restructuring and reestablishment of equilibrium) and secular trends (long-term change). This historical system, which has a temporal beginning and a temporal end, is systemic because its structure remains "qualitatively recognizable over the long term"; its features are the cyclical rhythms. It is historical because it constantly changes over time; this change results in secular trends[15]. The tension between the cyclical rhythms and the secular trends is "the defining characteristic of a geohistorical social system" (Wallerstein 1991, p. 146).

In this approach, time is a social construct —and there are multiple ways of constructing its meaning;[16] it is not an "independently-given, ordering dimension" (Hopkins and Wallerstein 1977, p. 124). On the contrary it is an integral dimension of the system. Time in the form of trends and cycles of the modern world-system "is constitutive of it as a system, not merely a coordinate of the variations of its properties... It does not 'have' a history or a set of histories so much as it constitutes a history or set of histories" (*Ibid.*).

Immanuel Wallerstein and the Time-Space – of the Modern World-System

As Wallerstein underlines, in the Braudelian analysis of the varieties of social time, suggesting the necessity of turning to cyclical and structural

[15] There are at least three such secular trends on which there is general agreement: "expansion," "commodification," and "mechanization." See Hopkins and Wallerstein (1977).
[16] For another conceptualization of time, see Pomian's topology of time based on chronometry, chronology, and chronosophy (Pomian 1979). For an account of time and space in social life to highlight material links between political-economic and cultural processes, see Harvey (1989, p. 201).

time, "curiously, there is no mention of space. This is all the more curious since, in his major works, space was central to his analysis" (Wallerstein 1991, p. 139). Although Braudel does not explicitly discuss space, Wallerstein (1991, 1998a) argues that each of the four times — episodic, cyclical, structural, and eternal — has a corresponding space and furthermore that time and space are not two separate dimensions but together form one single category. He calls this category "Time-Space".

Wallerstein finds spatial counterparts in the "substantive objects" that distinguish the categories of social time. Episodic time "is served by immediate geopolitical space" which is "every bit as controversial and as constructed a phenomenon" (Wallerstein 1991, p.139). By episodic geopolitical Time-Space, Wallerstein means "those categories by which we discuss immediate history" as, for example, events reported in every day's newspapers or, since immediate history does not have to be necessarily current history, such as the "fall of the Bastille on July 14, 1789" (Wallerstein 1998a, p. 2). It implies a political and historical judgement and the "key element is that it is short-term in its definitions of both time and space, and the events are tied to the meanings given to them by the immediate context in which they occur" (*Ibid.*).

According to Wallerstein, cyclical time corresponds to what he calls "ideological space". To illustrate the cyclico-ideological Time-Space, Wallerstein uses the spatial category East-West, which refers to the contemporary political, military, cultural and, above all, ideological division of the world. The particular usage of the expression East-West is tied to the so-called Cold War between the United States and the U.S.S.R. and therefore cannot go back further than 1945. Although there have been, historically, other East-West pairings (Greece and Persia, Rome and Byzantium, Europe and the Orient, etc.), "it is clear that the post-1945 use of East-West is tied to a particular phase of the history of the modern world" (Wallerstein 1991, p. 141). In Wallerstein's analysis, East-West is a socially created geographic category linked to a specific time period. It is explained by, and in turn explains, "major economic, political, and social thrusts that are in some sense 'medium-term' in time-span" (*Ibid.* p. 142).

Structural time (long-term) corresponds to structural space (large-scale). So the third category becomes structural Time-Space. In world-systems analysis, this structural space coincides with that of an historical system, for instance the capitalist world-economy. "Like all other historical systems, the capitalist world-economy has a temporal beginning and it will have a temporal end" (Wallerstein 1991, p. 142). These temporal boundaries, however, are not self-evident. For Wallerstein (1974, 1983) the world-economy came into existence in the "long sixteenth century." At that time it included geographically much of Europe and parts of the Americas and during its second great expansion from 1750 to 1850 it "incorporated" other areas of the so-called external arena (Hopkins and Wallerstein 1987).[17]

The category of eternal Time-Space is the one that corresponds to Braudel's "time of the sages". It "is to be found in the generalizations of nomothetic social science which are said to hold true 'across time and space'. As time becomes irrelevant in such a formulation, so of course does space" (Wallerstein 1991, p. 144). The "defining characteristic" is the assumption of timelessness and spacelessness (Wallerstein 1998a, p. 2).

The idiographic-nomothetic vision has formed the "ideological glue" of our present historical world-system (*Ibid.* p. 145). "But since these two groups and their equally universalizing approaches have together dominated our social analyses for two centuries now, no wonder we have never been taught to think seriously about time and space. No wonder we tend to think of them as somehow just there" (Wallerstein 1991, p. 144).

Lastly, by transformational Time-Space Wallerstein means "exactly the opposite kind of analysis, one which emphasizes the specialness of the occurrence, its exceptional quality, and its profound effect on all the major institutions of our world" (*Ibid.*). It is the time of *kairos* as oppposed to *chronos*; it is the "right time" as opposed to "formal time." Paul Tillich maintained that this was the distinction between "qualitative" and

[17] However, many scholars do not agree with this view and there has been an active debate over the boundaries of the modern world-system. See, for example, Chaudhuri (1981) and Nolte (1982).

"quantitative" time (Tillich 1948, p.33).[18] For Wallerstein, "crisis" and "transition" are "avatars" of *kairos*. The crises and transitions he talks about are not related to cyclical-ideological Time-Space (despite the tendency to interpret each downturn as a crisis), however, because cycles are fundamentally repetitive and regenerative. Instead, they have to do with the long-term exhaustion of the regenerative possibilities of the processes reproducing the system over time and thus result in the structural transformation of the system itself and the transition to new forms of long-term social organization. It is "the profound transformation or rupture that we believe has occurred, and which has affected everything subsequent to it" (Wallerstein 1998a, p. 2). In the language of Ilya Prigogine, transformational TimeSpace is the one where "cascading bifurcation" ensures the "transition to chaos" and, out of this chaos, a new order.[19]

Each of these five varieties of Time-Space presents a completely different level of analysis. By proposing alternative, conceptual categories and by using the Time-Space of analysis as "the primary question of research," Wallerstein invites us to "unthink" nineteenth-century social science. World-systems studies openly discuss and try to undermine our certainties about time and space legitimated by the Newtonian model and treated as "accidental specificities".[20] Therefore, world-systems analysis represents one of the responses expressing unease with the basic premises and organizational framework of classical social sciences. Along with "minority movements", it attempts to "reopen the debate" and to restate the issues in new ways.

[18] According to Wallerstein the "right" moment is when we can "transform the world"; it is precisely when structures "move very far from equilibrium, when they are on the edge of bifurcation, that small pushes in one direction or another can have an enormous impact, can in fact determine the shape of the replacement historical system that will come into existence" (Wallerstein 1998a, p. 8).

[19] "The 'historical' path along which the system evolves as the control parameter grows is characterized by a succession of stable regions, where deterministic laws dominate, and of instable ones, near the bifurcation points, where the system can 'choose' between or among more than one possible future" (Prigogine and Stengers 1984, pp. 169-70).

[20] Even in the post-1945 period most scholars kept time and space as marginal, "as intellectually accidental, as they had previously been. New organizational rubrics were invented to 'contain' the impact of this geopolitical transformation: area studies, development studies, and multidisciplinarity. None of these rubrics... solved the problem, since none of them escaped the nomothetic-idiographic antinomy" (Wallerstein 1993, p. 7).

As Wallerstein shows, "[w]e have entered into a new period of intellectual uncertainty in which the premises that have formed a consensus for over a century are under attack" (Wallerstein 1993, pp. 5, 8). Indeed, the paradigms of modern science, on which nineteenth-century social science was constructed, have been challenged by the practitioners of the so-called "new science"[21] from five different directions. The first is the belief in determinacy and therefore in the possibilities of prediction. Classical modern science asserted that all physical processes operate according to "law-like propositions", which were capable of being known. If the law (i.e. the equation) was known as well as the so-called initial conditions of any system, it was possible to predict the future (Cfr. Cini 1994, p. 24)[22]. To these assumptions "new scientists" oppose the argument that linear processes are momentary and that stable equilibria are exceptional[23]. With regard to the second premise of classical science based on the desirability and possibility of precision, in the last twenty years mathematicians have been demonstrating that absolute precision instead is not possible and therefore the attempt to achieve it is scientifically undesirable (Gödel 1962)[24]. The third premise has been that physical processes are reversible meaning "that time is irrelevant". The new scientists talk of the "arrow of time"[25], of the fundamental irreversibility of all physical processes, both macro such as human historical systems and micro such as atomic interaction. The fourth premise was "the mandate to reduce complex confusion (the presumed state of observable reality) to elegant simplicity". Again this schema is

[21] For a selective annotated bibliography on "new science", see Lee (1992). For a critical analysis of the principal visions that have dominated the scientific practices (and its social and political value), see Cini (1994).

[22] On the alternative vision of history as unpredictable and unrepeatable, see Gould (1989).

[23] "La scoperta dell'instabilità dinamica bandisce dunque per sempre dalla fisica la certezza nella capacità previsionale della legge matematica che regola il moto di ogni massa materiale. La caoticità intrinseca del comportamento di ogni sistema sottoposto all'azione di forze non lineari diventa perciò la norma, mentre la regolarità dei moti dei corpi celelsti, fondamento concettuale della dinamica newtoniana, si rivela un'eccezione..." (Cini 1994, p. 54).

[24] Gödel (1962) argued that all mathematical models are contradictory or incomplete and cannot explain an historical process.

[25] On the arrow of time, see Coveney and Highfield (1990). The authors discuss the divergence between the time-reversible mathematics of Newtonian mechanics and the direction of time in the experiential world of dynamical systems. Cf. Lee (1992, p. 164).

reversed by the new science. "Since macrostructures are constantly creating new orders, ever larger and more dense, the object of scientific inquiry becomes not the reduction of complexity (easy to describe) to simplicity (difficult to achieve), but the inverse" (Wallerstein, 1993, p. 19)[26]. The fifth premise was the moral neutrality of the scientist. Born and Heisenberg (1928) demonstrated that, for microscopic phenomena, the process of investigation itself transformed the phenomenon observed, what Heisenberg called "uncertainty principle" (Wallerstein 1993, p. 19). In recent years, new scientists are going even further. In fact, they have argued that the uncertainty principle is not limited to microscopic reality and that all theorizing constrains our vision. The involvement of the scientist in the object of enquiry becomes "inescapable" (Wallerstein 1993, p. 20; Prigogine and Stengers 1984).

Historical Social Science

By "unthinking" dominant assumptions of social science, Wallerstein rejects two organizational structures of the nineteenth-century knowledge production. The first are the nomothetic/idiographic antinomy and the division of social analysis into the economic, political and socio-cultural arenas as different logics; a "trinity" which blocks our intellectual advance (Wallerstein 1991a, p. 4). The second refers to the "trimodal schema" of social science located between the humanities and the exact sciences. In opposition, world-systems analysis has arrived at the assertion of a "radical unidisciplinarity" which Wallerstein calls "historical social science" — an intellectual category within the historical development of the modern world-system (Wallerstein 1993, pp. 16-17).

According to Wallerstein, historical social scientists should welcome new science and draw from it "the necessary implications for their work". The main implication should be "the need to make TimeSpace the central organizing pole of their work" and to recognize its multiplicity (Wallerstein 1993, p. 20). In order to reconstruct the historical social

[26] On the "challenge of complexity", see Bocchi and Ceruti (1992). They discuss the reintroduction of uncertainty in a kind of knowledge which aimed at absolute certainty.

science it becomes necessary to rethink our conceptual apparatus. In this sense Time-Space can provide a methodological alternative to the nineteenth-century model for a more useful analysis of social change. "We shall have to see whether the multiplicity of TimeSpace gives us any possibility of devising new divisions of labor more pertinent intellectually..." (Wallerstein 1993, p. 22). One of the reasons Wallerstein believes it does, is because "we are living in a transformational TimeSpace coming at the end of the long structural Time-Space of the modern world-system" (*Ibid.*).

This transformational Time-Space is "the crisis in transition" — a long process, due to contradictions built into the economic and political structures of the present capitalist system — which has already begun and which will result in the demise of our system. It will be replaced by "something else" which presents no guarantee that will be better (cf. Amin, Arrighi, Frank and Wallerstein 1982). Although there is no guarantee, there are meaningful possibilities. In the time of transformation, "our collective choice" can have great impact on the direction transformation takes. All this "may signal the need for rethinking in terms of new and expanded methodological categories" (Lee 1998, p. 68) and for following Hopkins' (1983) invitation to go beyond established methods, described by Richard Lee as "a special sort of imaginative social action: think the past to make a past with the purpose of making the future by thinking a future" (*Ibid.*).

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