

# **Institutionalist Thought: Ceremonial-Instrumental Dichotomy of the Veblen-Ayres Tradition**

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*Veblen and Ayres' ceremonial-instrumental dichotomy is considered the analytical core of Old Institutional Theory (OIT). This view offers a distinct perspective for analyzing economic issues. The object of economics is studied at the level of cultural generalization, not individual generalization (as neoclassicists do). Human behavior is understood as a process of cumulative adaptation to contextual circumstances. Thus, understanding the meaning of the dichotomy – of doing things and making social distinctions, and of its application to illuminate modern economic problems – deserves attention. This systematic literature review describes the main theoretical, analytical, methodological, and empirical contributions to the ceremonial-instrumental dichotomy of the Veblen-Ayres tradition. To this end, articles on the topic published in the last 46 years were reviewed, which resulted in the analysis of 45 articles, which can be classified as a) conceptual b) methodological; c) empirical, and d) literature reviews. This body of analysis provided insights that lead to inferring the possibility of research in different fields of social sciences.*

*Keywords: ceremonial-instrumental dichotomy, Old Institutional Theory, Veblen-Ayres's tradition*

## **INTRODUCTION**

The Veblenian or ceremonial-instrumental dichotomy is not only a key concept of OIT but is considered by many to be the analytical nucleus of this strand of thought (Bush, 1983; Foster, 1981a; Waller, 1982). This is because it breaks with the neoclassical theory, by analyzing the object of the economics study at the level of cultural generalization and not at the level of individual generalization. This paradigm shift broadens its view of the “way to earn a living”. It identifies that “earning a living” includes both the use of tools to do things of an instrumental character and to make social distinctions of a ceremonial nature (Ayres, 1944). It also breaks down because it treats human behavior as a process of cumulative

adaptation to circumstances, while neoclassicals assume a priori, about the nature of human behavior and do not subject it to any testing process (Waller, 1982). This article used the term Old Institutional Theory to refer to institutionalists of the Veblen-Ayres tradition, who are recognized as thinkers of the “original” institutional theory. The adjectives “original” or “old” are used to differentiate this chain from modern theoretical formulations, which can also be classified as institutionalist (Böck and Almeida, 2018). According to Ayres, the only perspective institutionalists have in common is criticism of neoclassical theory (Ayres, 1944).

Despite ceremonial-instrumental dichotomy being one of the most relevant concepts for the analysis of OIT, institutionalists have the challenge of instrumentalizing it with their methodology of analysis. Although, over time, it has been analyzed and reflected on from the perspective of several authors, of which Dugger (1995) stands out; Foster, (1981); Junker, (1979, 1982, 1983), there are few studies on its operationalization, basically those of Bush, (1983, 1987, 1989), Natarajan, Elsner, and Fullwiller, (2009) and O’Hara (2018). In addition, modern institutionalists have introduced an interpretation of Veblen’s dichotomy, different from the Ayresian interpretation (Böck and Almeida, 2018). Thus, the established problem concerns understanding how the key concepts of instrumentalism and ceremonialism evolved into the concept of ceremonial and instrumental dichotomy over time, both in theoretical, analytical, and empirical terms. Therefore, the objective is to describe the main theoretical, analytical, methodological, and empirical contributions to the ceremonial-instrumental dichotomy of the Veblen-Ayres tradition.

The objective was pursued through a systematic literature review covering articles published in the past 46 years. It is not common to find systematic literature reviews of central concepts in the institutional tradition of Veblen-Ayres, generally, these reviews are carried out in a narrative, but not in a systematic way. The only one that was identified through this research was that carried out by Almeida (2018), whose central concept of investigation focuses on institutions. However, systematic reviews are pertinent, as they enable an understanding of the theory and indicate research possibilities (Webster and Watson, 2002).

James Esturgeon emphasized in the introduction of the 1996 edition of Ayres’ Theory of Economic Progress (1944/1996), that the instrumental ceremonial dichotomy was the “genuine analytical alternative to economic activities” (Esturgeon, 1944/1996, paragraph 2). Despite its importance, its application is timid given its analytical potential. On the other hand, Paul Strassmann, already in 1974, predicted that the Ayresian technology approach to economic progress would surpass the “determinism of the class struggle and entrepreneurial glorification” because he perceived the potential of this concept, but at that time it still received little attention (Strassmann, 1974, p. 671). In addition, the very meaning of the technological process requires a reassessment from time to time since both technology and human behavior change over time. Institutionalists see human behavior as a process of cumulative adaptation to changing circumstances in the cultural context in which the behavior occurs (Waller, 1982). It is understood that investigating the concept and presenting its evolution over time is essential to advance the scientific process of institutional theory.

This article begins by situating the Institutional Theory of Tradition Veblen-Ayres and then immediately presents the concept of terms that culminate in the expression ceremonial-instrumental dichotomy. In the second session, the methodology is presented, the analysis of the results with the evolution of the concepts and the new empirical and analytical questions, and, finally, the final considerations.

## **LITERATURE REVIEW**

### **The Institutional Theory of the Veblen-Ayres Tradition**

Until the publication of Hamilton’s text (1919), Institutional Theory was understood as an approach or an aspect of economic theory. However, that text suggested that the evolution of economic theory had failed to “recognize the complexity of the relationships that link human well-being to industry” (Hamilton, 1919, p. 311), whereas the institutional approach aimed at doing just that. Hence, the approach should be understood as the theory itself, since it grounded economic behavior in institutions, habits, and their

consequences, instead of assuming that a human being is utilitarian by nature (Almeida and Pessali, 2017; Böck and Almeida, 2018; Hamilton, 1919).

In this regard, Thorstein Veblen is considered one of the founders of this theory. His first writings date from the late 19th century and his publications extend to the first three decades of the 20th century. His analysis focused on the economic problems from a different perspective from the hegemonic thinking of the time, which was strongly influenced by the classical and neoclassical economic schools, which he considered too teleological since complex real-life phenomena are not always explained by a few variables in a model. Veblen proposed the emphasis more on the economic process and not so much on its ends (Bock and Almeida 2018; Hamilton, 1919; Veblen, 1898 and 1899) and strongly contested how pecuniary interests overlapped the interests and values of the collective. He did not emphasize the process of institutional change, but he sowed the seeds for it by inferring that technology could perhaps weaken pecuniary interests in favor of industrial interests (Böck and Almeida, 2018).

Clarence Ayres looked at Veblen's embryonic idea of studying institutional change. Ayres was one of Veblen's main disciples, a philosopher and economist, he was a professor of economics at the University of Texas in Austin for almost 40 years and his most important work is *The Theory of Economic Progress* (1944). Politically speaking, Ayres is considered a reformer who was both critical of liberalism and radicalism, as he considered both insufficiently instrumental in solving social and economic problems. Moreover, he is considered an ethical cognitivist because he believes that moral choices are essentially objective (Tilman, 1974). Ayres was the leader of the Cactus Branch, a group of researchers who studied the Ayresian perspective of Veblen's writings, namely: the importance of ceremonial and instrumental aspects to explain economic development (Almeida and Pessali, 2017; Böck and Almeida, 2018).

Junker, (1979), one of the "cactus branchers", synthesizes the institutional theory of the Veblen-Ayres tradition in seven main aspects. The first aspect concerns the teleological problem of analysis of cause and effect. Ayres and Veblen defended the concept of causality in procedural terms. That is, instead of primary causes and final effects, they maintained that socioeconomic phenomena and all life processes should be analyzed as evolutionary systems and as ensembles of open, continuous, and contextual relationships (Veblen 1898, 1899, Hamilton, 1919, Ayres, 1944, Junker, 1979, Böck and Almeida, 2018).

The second aspect concerns the rejection of metaphysical dualism, of body and mind, and of a reductionist conception of reality found in expressions, such as: individual - social, means - end, body - soul, external - internal, materialist - idealistic, subjective-objective and others along the same lines. Principally, Ayres rejected a conception of the individual and the social that defines each of them as insular to the other (Junker, 1979). Second (Tilman, 1974), dualism is rejected by Ayres, as it generally leads to two errors: first is the sharp separation of facts and values and the second error is the belief that since they are so different, they are hardly related to each other. "All human activities are the sum of the acts of individual men. This is the level of generalization at which ordinary human affairs are conducted (...)" (Ayres, 1944, p. 97). This passage makes clear not only the rejection of dualism but also the idea that social reality can only be understood from the broader context which leads to the third aspect.

The third aspect is that of culture: "All analysis must proceed at the level of generalization of culture and not of individuality so that the principle of technological progress is understood" (Ayres, 1944, p. 112). John Hodges comments in addendum II of *The Theory of Economic Progress*: "Until economists become aware of the role of culture, it is unlikely that they, including liberals, will break free from seemingly scientific systems that justify some system established somewhere" (Ayres, 1944/1996, Addendum II, para. 10). This means that an institutionalist who follows the Veblen-Ayres perspective should always understand phenomena in contextual, historical and evolutionary terms. This is because human beings become socially and culturally human through the birth of cultures, with institutional forms, to which they partially adhere and, in part, challenge as cultural forms undergo change (Junker, 1979).

The fourth aspect deals with the nature of institutions, they do not derive from the simple sum of individuals who are what they are "by nature" in a causal way. Although the word institution is used in a vague and even imprecise sense, the original or basic institutions (family, church, cities) are more than structural subdivisions of the social whole. They also have functional peculiarities in common that "give them a common tone and color and mark them, both functionally and structurally, from the undifferentiated

mass of social behavior” (Ayres, 1944, p. 180). The characteristics of these basic institutions are more ceremonial than technological and, for this reason, when referring to the nature of institutions, the ceremonial behavior stands out in these.

The fifth aspect refers to the technological-scientific process and was analyzed by Ayres based on the assumption that learning is a cultural process. Thus, part of learning has to do with technological processes and part with ceremonial forces. The technological process is a cultural process because, at the same time, it involves human beings who combine tools, concepts, and ideas. The greater the proliferation of tools, concepts, and ideas, the more tools, concepts, and ideas there are for humans to combine (Ayres, 1944).

The sixth aspect focuses on the criticism of the price system and all the value analysis constructed by neoclassical economic theory. The judgments and value assessments are culturally, institutionally, and justifiably more complex than neoclassical economic theory supposes (Junker, 1979). For every individual and the community, the value criterion is the continuation of the process of life, “keeping the machines running” (Ayres, 1944, p. 223). Thus, Ayres understood that humanity evolves because of its technological behavior, that is, its ability to improve the social environment using intellect in creating or improving existing tools.

Finally, the seventh aspect of the institutional theory of the Veblen-Ayres tradition is the dichotomy of the ceremonial and instrumental aspects that are found at the extremes of a continuum. The story is a perpetual opposition of two forces: the dynamic force of technology - which continually promotes change and the static force of the ceremony - legendary customs and beliefs that hinder change (Ayres, 1944). This dichotomy focuses on the general interest of this article, which will be presented in more detail below.

### **Instrumental Ceremonial Dichotomy**

The seven aspects listed by Louis Junker, (1979), are not independent. On the contrary, they are intertwined with each other, so that the explanation of one depends on and is intertwined with that of another. To explain the dichotomy, it is necessary to understand the importance of culture, the concept of institutions, and ceremonial and technological (instrumental) behavior. This construction will start in Veblen, later Ayres, and will be built chronologically throughout this research.

Veblen affirms that institutions and habits contain great ceremonial content in his work entitled *The Theory of the Leisure Class*. The ceremonial can be understood as that which is socially acceptable and does not have relevant technological aspects. Thus, ceremonialism is a social creation at the heart of the customs of a given culture. In its conception, the idle class dictates customs rooted in society by habits (Veblen, 1899). Later, in *The Theory of Business Enterprise*, he observes that productive improvements are only possible through technological evolution by focusing on the influence of business logic on the social structure. Then he concludes that technology is a factor of change capable of being developed at the core of society by individuals who participate in it (Veblen, 1906). The parallel study of these two works permits identifying the cradle of the dichotomy (Böck and Almeida, 2018). The ceremonial aspect is extensively detailed in the first, through the analysis of honorific idleness, the role of women, clothing, and consumption, among others. These aspects have been analyzed over time in different cultures. On the other hand, from the analysis of the company’s functioning in *The Theory of Business Enterprise*, he segments the analysis in the machinic and management processes. The first evolves with technology and generates an impersonal cause and effect, while the second is ceremonially inherited and generates the natural feeling of property rights (Veblen, 1906).

However, it was only through Ayres’ analysis that the analytical distinction between technology and ceremony was given. His analysis starts from a commonplace: the object of the study of economics, that is, “the activities in which men are dedicated to earning a living” (Ayres, 1944, p. 98). But, for him, the fact of “earning a living” should be analyzed at the level of cultural generalization and not at the level of individual generalization. This is because “earning a living” comprises both the relationship between the use of tools to do things (instrumentalism) and the use of tools to make social distinctions (ceremonialism). These two sets of activities not only coexist but are conditioned at each moment. In his words: “The distinction between the technological and ceremonial aspects of organized behavior is a dichotomy, but not

a dualism, that is, it undertakes to distinguish two aspects of what is still a single continuous activity, whose aspects are present all the time” (Ayres, 1944, p.101).

Like Veblen, Ayres analyzed institutions as a particular aspect of culture, which are characterized by repeated behaviors, based on habit and, therefore, less prone to change. He emphasizes the danger of using the word “institution” to denote this aspect of culture and suggests looking at Veblen using the term “ceremonial function”. This substitution of the term “institution” with “ceremonial function” had two main effects. First, it eliminated the inaccuracy associated with the term “institution”, because “ceremonial” carries a more specific meaning. Second, it eliminated the confusion generated by the concept of institutions, defined by Hamilton (1919), which perceived the institution as “a stimulus to change”. In the view of Veblen and Ayres, the “institutions” of the time would be another hindrance to it (Waller, 1982).

According to Veblen (1899), ceremonialism is socially created by the habits, customs, and institutions of the past which conditions the social issues of the present. In his work *The Theory of the Leisure Class* he describes that both the way of consuming and leisure are carried out by customs and are rooted in social behavior. These customs mirror the idle class. In other words, it is not enough to belong to the idle class, it is necessary to acquire the status associated with it. It is not enough to consume to survive, the idle class also employs waste (Veblen, 1899).

Ceremonial behavior determines the status, in a ritualistic process, of mystical powers, by a set of beliefs of which all “ceremonial adequacy” is an expression, or in which the entire system of power of status and customs finds its supposed justification (Ayres, 1944). “Ceremonial adequacy” is a process by which society parsimoniously absorbs technology, thus affecting only some of its established habits without breaking its complete institutional set (Veblen, 1906).

However, this does not mean that ceremonial behavior has never contributed to change, nor that it must be disregarded or less important: “It does not mean that ceremonial systems of behavior do not change. We know that they change” (Ayres, 1944, p.162). This also does not mean that the great strength of the community tradition has no importance, on the contrary, it should even be the objective of social analysis to “try to understand the nature of this force and how it operates in the life of any community and even more, in the process of social change” (Ayres, 1944, p.162).

Technology, in turn, covers all human activities, which involve the use of tools of all kinds. For Ayres, technology ranges from the use of the simplest and most rudimentary stones to the most modern laboratory equipment, including written language, books, and mathematical symbols, that is, human skills imbricated with tools (Ayres, 1944). Throughout the book *Theory of Economic Progress*, Ayres uses the terms “ceremonial” and “technological” at various times, including explaining why the relationship between them is dichotomous. However, the expression: “ceremonial-instrumental dichotomy” was coined much later, from a re-reading of the writings of Veblen and Ayres, by Bush and Junker (Almeida and Pessali, 2017; Bush, 1983, 1987; Junker, 1982, 1983). In just one passage of his book, Ayres uses the word instrumental as a synonym for technological, when explaining the similarities of logical values, moral values, and aesthetic values: “What they have in common is the technological (or instrumental) continuum to which all make reference and from all derives their meaning” (Ayres, 1944, p. 222).

Ayres envisioned that economic progress was explained by technological evolution, while Veblen was not so optimistic about the possibility of institutional change (even though he signaled that the technological advance of the machinic process could occur) and used the ceremonial term almost as synonymous with institutions (Waller, 1982). Even though Ayres explained why she preferred to use the word “ceremonial” instead of “institution”, for her, institutions are not inhibitors or stimulators of change, since they are present in both technological and ceremonial aspects of organized behavior. Whether institutions are agents of change or not depends on how oriented they are to ceremonial or instrumental behavior. The next item presents the methodology used to select the analyzed articles.

## METHODOLOGY

### Description of the Body of Analysis and Sources of Evidence

For the definition of the body of analysis, the systematic literature review (SLR) procedures were applied according to what was prescribed by Levy and Ellis, (2006). These authors suggest performing the analysis in 3 phases: input, processing, and output. In the “entries” phase, the review protocol is elaborated, comprising the description of the search criteria, the inclusion and exclusion criteria, as well as the description of the analysis techniques and tools. In the “processing” phase, what was defined in the protocol is applied. The first two phases are described in the methodological procedures and generate the “output” whose information is briefly presented but is detailed in the analysis of the results.

Thus, the First Phase was composed of Entries. For that, searches were carried out in the following databases: Web of Science - WoS, Scopus, and Ebesco Host. They were chosen because they include relevant journals in the fields of economics, accounting, and administration, in addition to allowing searches of more than one combination of terms simultaneously. The keywords, in English, “ceremonial” and “instrumental” were used for the query, generating the search string “ceremonial AND instrumental”.

In the Scopus database, the search string was entered in quotation marks in the “title, abstract, and keywords” field. The research was refined by the areas “Economics, Econometrics and Finance” and “Business, Management and Accounting”, returning 22 articles. In WoS, the search string was typed in the “topic” field and later the results were refined by the “economics”, “management” and “business” knowledge areas, returning 16 articles. Finally, in Ebesco Host, no specific field was selected. The search was refined by the subject’s “economics”, “human behavior”, “Ayres, Clarence Edwin, 1891-1972”, “Veblen, Thorstein, 1857-1929”, “Journal of Economic Issues (periodical)”, “organizational structure” and returned 29 articles, of which the database itself excluded duplicates, leaving 18.

After the selection of 56 articles (22 in Scopus, 16 in WoS, and 18 in Ebesco Host), the exclusion criteria adopted were applied consecutively through 4 stages: stage 1, repeated articles (which appeared on more than one basis), stage 2, articles that were not adhering to the research question after reading the title, abstract and keywords, were excluded, stage 3 - articles written in languages other than English, Portuguese or Spanish were excluded and stage 4 - articles that were not adherent to the research question, identified after the reading the respective introduction and conclusion were excluded. The articles that remained after applying the 4 stages were read in full.

Following, in a process of analysis “back and forth”, the seminal book *The Theory of Economic Progress* by Ayres was included, and due to its great prominence, the work of Paul D. Bush. Notably, the articles *An Exploration of the Structural Characteristics of a Veblen-Ayres-Foster Defined Institutional Domain* (1983), *The Theory of Institutional Change* (1987), and *The Concept of “Progressive” Institutional Change and Its Implications for Economic Policy Formation* (1989), were also included in the analysis. In addition, it was possible to infer that the *Journal of Economic Issues* (JEI) is the one that most publishes articles on the subject. Hence, a specific review was carried out of the last 10 years of this journal’s edition, in which the terms “ceremonial AND instrumental” were typed in the proper field for the research, totaling 15 articles.

Phase 2 comprised the processing stage. In this phase, the articles were identified, selected, and evaluated, following the inclusion and exclusion criteria established in the previous phase, whose criteria resulted in 45 articles (in addition to the book *The Theory of Economic Progress*), as detailed in Table 1.

**TABLE 1**  
**EXCLUSION/INCLUSION CRITERIA**

Number of articles	WOS	Scopus	EBSCO	JEI	Back and forth	Total
Number of articles	16	22	18	15	-	71
(-) duplicates	(13)	-	(4)	(2)	-	(19)
(-) excluded after reading the title, summary, and keywords	-	-	-	-	-	-
(-) foreign language (other than English or Spanish)	(1)	-	-	-	-	(1)
(-) excluded after reading the introduction and conclusion	(1)	-	(6)	(3)	-	(10)
(+) articles included due to the relevance attributed to the previous literature					4	4
Total	1	22	8	10	4	45

Source: by authors

The exclusion of the 10 articles, after reading the introduction and conclusion, was established for the following reasons: three of them were classified in the databases as articles but were configured as two comments on articles and one was an editorial. The other seven articles were excluded because they did not deal with dichotomy, but they only cited it once throughout the text without any further elaboration.

The third stage proposed is the analysis of the article or the “Output” phase. This stage aimed to collect information to support the study. Each article was analyzed individually to extract the meaning and main contributions to the theoretical, analytical, methodological, and empirical issues of the ceremonial-instrumental dichotomy. The presentation and discussion of the results are emphasized in the analysis of the results.

### **Evidence Collection and Analysis Technique**

The research took place between June 25th and July 25th, 2020. From the reading of the articles, the methodology, subject, theory used, and the main conclusions of each one were classified. With a review of the reading performed, it was possible to classify the articles in the following clusters: 1) conceptual articles, which present or develop concepts about the dichotomy. These articles are usually the oldest, 2) articles dealing with methodology, which present some methodology for testing the theory or suggest methodological approaches, 3) empirical articles, which apply the theory in some context through some methodological approach and are predominantly the most recent and 4) literature reviews, which develop some theme from previous studies.

The texts read were submitted to an analysis technique called hermeneutic debate, which according to (Minayo, 2002) is not limited to a simple technique of analysis of evidence, but by enabling a reflection that is based on praxis, the union of both approaches enriches the conduct of the process, both comprehensive and critical in the study of social reality. The union of hermeneutics with dialectics is defended by Stein (1987), since they are two paths that can elevate the method to an “instrument for the production of rationality, through the convergence between philosophy and human sciences”, transcending the “fragmentation of scientific procedures in general”. He understands that critical reflection “accentuates difference and contrast, while hermeneutic reflection accentuates identity”. Thus, the critical (dialectical) method detects “the rupture of meaning, while the hermeneutic method seeks in many senses the lost unity” (Stein, 1987, p. 25).

Thus, each article was read more than once, in chronological order, allowing us to identify both the contextualization of the ceremonial and instrumental concept and the evolution of the concept itself over time. The first reading was performed to familiarize us with the content covered and identify if it was adequate to the proposed objective. A second reading, this time more attentive, was done while the most important excerpts were highlighted. This process was completed in August 2020. The third reading

identified and grouped the information of interest, such as key concepts and theory, and was completed in January 2021. In the case of empirical studies, we sought to identify the method employed and the context of application in addition to these aspects.

## **RESULTS AND DISCUSSION**

Reading the articles made it possible to classify them into four categories of reviewed articles: conceptual, methodological, empirical, and literature review. In addition to the classic election to support this discussion: Ayres. The set of conceptual articles discusses and deepens both the meaning of dichotomy and its usefulness in the analysis of economic and social problems. They are characterized by being, generally, older articles. This group of scholars explores both the technological aspect of dichotomy and its understanding in the context of institutions. The central criticism established concerns the need for the instrumentalization of the “analytical nucleus” to advance OIT.

The methodological articles comprise the efforts to instrumentalize institutional theory with analysis methodologies adhering to the analytical nucleus, ceremonial-instrumental dichotomy. These are more recent articles, whose authors may have moved from the central criticism of conceptual articles. In this context, we identified authors who innovated and sought to develop their methodologies and those who validated applied methodologies.

Empirical articles are those in which some methodological procedures are used to analyze the specific economic and social reality, in the light of the ceremonial-instrumental dichotomy. Finally, articles that used literature review were identified, whose authors, unlike the previous categories, were based on previous literature to obtain answers to their research problems. Thus, below we present the deepening of the aspects summarized so far.

### **The Technological Aspect of the Dichotomy**

Ayres understood that economic progress was due to technology, not in the sense of technological determinism, but considering that technology is a process of knowledge and human skills combined with tools and, most importantly, a continuous process. Thus, he understood that technological innovations arose from the ability to combine the physical character of tools: “Inventions and discoveries are combinations of tools, instruments, and materials instrumentally manipulated; and the more tools there are, the greater the potential for innovation and technological discovery” (Ayres, 1944, p. 211). However, Wisman and Rozansky (1991) criticize institutionalists for claiming that economic progress occurs due to technology but do not describe how institutions evolve. They also criticize that they have not developed any model of social change with formulable and widely accepted properties.

For De Gregori (1977), in Ayres’ theory of economic progress, the term “technology” necessitates definition. In his conception, his mentality was reductionist since he conceived technology implicitly as the success of devices. Ayres (1944/1996) refutes the misinterpretations in the preface to the 1962 edition, clarifying: “But tools are not technology. The two most common mistakes people make about technology are: (1) thinking of it as non-human tools and (2) thinking of it as human skill. Both mistakes make it impossible to understand how technology develops” (Foreword 1962, para. 6). Perhaps consequently, Almeida and Pessali, (2017) claim that De Gregori considered Ayres to be a technological determinist.

The fact is that De Gregori (1977) recognizes that the Ayresian technological scheme is useful for interpreting historical changes on a large scale yet understands that it is flawed in the application of theory to historical or contemporary issues. Foster, (1981b), agrees that social theory does not clearly and directly enable us to solve the social problems generated by technology, but believes that institutional adjustments are the way. There is no stopping technological development, so there is no stopping the emergence of social problems. The only course is to solve these problems as they arise, as it is through the resolution of problems, both physical and social, that progress is made.

In this regard, (De Gregori, 1977) proposed a small change in Ayres’ technological approach, suggesting that the act of solving problems using tools should be defined by the term “technologizing”. This is because technology itself cannot be directly observed. Technology can only be inferred by observing



repeated acts of technologizing. And technologizing cannot be fully defined without specifying the problems to be solved. Thus, it appears that it advances in two ways: 1) in the definition of the term technology, which cannot be directly observed, only inferred from the observation of continuous acts of the use of tools for solving problems (technologizing); 2) thus, indirectly, it also proposes a methodology of analysis, namely: the repeated observation of human behavior, in solving a certain problem, with the use of tools.

The complexity lies in the fact that the technological process is cultural, that is, it involves human beings who combine tools, concepts, and ideas simultaneously and over time. Therefore, although culture and institutions contemplate both technological and instrumental aspects, Ayres tried to analyze these aspects separately. In his view, he isolated the aspect that slowed progress and, looking at Veblen, called it ceremonial and called those behaviors that oppose the ceremonial behavior, technological-instrumental behavior (Junker, 1979). The need to isolate each of these aspects arises only from a theoretical need since technology needs to be understood as a part of the behavior in symbiotic association with some conception of production relations, some conception of institutional functioning, and some conception of a pattern of control (Junker, 1982).

The maturation of Ayres' ideas by the Cactus Branchers brought the great challenge of identifying and separating the use of technology, "by destructive, exploratory and humiliating forces", from those constructive forces that use technology in a more "creative and with more liberating consequences" (Junker, 1983, p. 343). For this group of scholars, entrepreneurial power, most of the time, does not act for the benefit of humanity. Technology and science in such hands, "limited by a binding legal system, a distorted media system, and a comprehensive property control system is utterly destructive" (Junker, 1983, p. 344). The market mentality erodes the instrumental functions of the community, thus generating negative externalities in society (Swaney, 1981; Elsner, Hocker, and Schwardt, 2010).

That is why, it is cooperation (and not market mentality), considered the technological-instrumental dimension of institutionalism (Elsner Elsner, Hocker, and Schwardt, 2010). The habits of thought, implied in progressive institutional change, have a cooperative and non-conflicting nature, especially for the supporters of the ordonomic perspective. The ordinary perspective is a recently developed institutional economics research program that focuses on analyzing systematic interdependencies between institutions and ideas. This line of reasoning presupposes that in the process of progressive institutional change, the ceremonial patterns of behavior are displaced by the involvement of these self-interests in the problem-solving processes that benefit all participants. These problem-solving processes transcend the existing structure of ceremonial domination (Hielscher, Pies, and Valentinov, 2012).

However, Wisman and Rozansky (1991) believe that considering cooperation as the instrumental dimension of institutionalism makes no sense. This is because the argument that change is evolutionary has been adapted from the Darwinian concept of the evolution of species. However, the evolution of species occurs through natural selection, which is precisely based on competitiveness and not on cooperation. However, for institutionalists, cooperation, as opposed to competition, promotes economic and social well-being. Consequently, institutional economics does not have a mechanism fully comparable to Darwinian natural selection (Wisman and Rozansky, 1991).

Modernly, the concept of technological evolution has been discussed in terms of innovation. Elsner, (2018) sees innovation as the core of a complex adaptive economic system and its evolutionary dynamics. In this context, innovation would be the evolutionary process that would necessarily result in improving socioeconomic and social problems, common and collective in the real world. Dolfma (2019) states that innovation can happen when existing and standardized bodies of knowledge are combined. To this end, it suggests that institutionalized communication be observed within a company to discover how innovation takes shape. In addition, it emphasizes that the success of innovation depends on its added value or usefulness being perceived by a large enough group of community participants. Thus, from the institutional perspective, for a change to be considered innovation, the social result must be positive, the communication that deals with such a change must be institutionalized and a substantial group of individuals must perceive the result.

In this context, the Ayresian synthesis planted the roots for a theory of economic progress from the analysis of society through the lens of dichotomy. However, for post-Ayresian supporters, technology is no longer the dynamic factor in social change, which has become psychology, that is, it is based on human nature, on the “development capacity” of human psychology, and no longer on combinations of tools-skills of new technology. On the other hand, the factor resistant to social change is no longer primitivism and has become elitism. Still, the locus of value in the social process ceased to be technology and became a democracy. The nature of institutions has ceased to be monistic, that is, ceremonial, to be dualistic: instrumental and ceremonial. Consequently, progress is no longer obvious, but problematic (Dugger, 1995).

Therefore, it is important to remember the distinction between the instrumental and ceremonial functions of the institutions. Otherwise, it will not be possible to see very clearly the role that technology plays in social problems (Foster, 1981b; Waller, 1982). For this reason, the next item discusses the concept of dichotomy in the context of institutions.

### **Dichotomy in the Context of Institutions**

As it was possible to perceive until now, technology “is always inserted in a functional cultural context, as it is also simultaneously the context incorporated for other parts of the institutional pattern” (Junker, 1982, p. 143). Technology therefore involves a portion of human behavior that is correlated with both tools and context. In turn, the institution arises when a pattern of correlated behavior begins to be practiced by individuals whose activities and attitudes are correlated (Bush, 1983). These patterns of behavior are widely agreed upon among a group of people organized to pursue some particular purpose (Foster, 1981b).

For Ayres, the term institution was not a structural category. In other words, it did not refer only to dividing the total substance of society into its constituent parts. Rather, it would be a functional category, as they would be the vectors for transmitting ceremonial behaviors over time, inhibiting advances of an instrumental nature. The writings of Veblen and Ayres suggest that instrumentalism drives the development of society while ceremonialism slows it down (Ayres, 1944, Almeida and Pessali, 2017).

The reinterpretation of the original writings, which culminated in instrumental-ceremonial dichotomy, emphasizes that ceremonial behavior is so-called due to the myths and traditions that are used to manipulate and control human beings, ceremonially (Junker, 1983). This is how institutional power systems are defined and symbiotically understood, what controls them, how they exercise that control, and to what extent their control can or cannot be summed up. From this perspective, institutional power controls technological forces.

Thus, the concept of institutions, for institutionalists of the Veblen-Ayres tradition, evolved from the “synonym of ceremonial” to the “prescribed patterns of human behavior correlated with (a) ceremonial and (b) instrumental aspects” Foster (1981b, p. 908). This way, institutions are evaluated according to the different ways in which power of control is exercised or, at the end of the continuum, actions are carried out cooperatively. Thus, when observing patterns of institutional behavior, it should be sought to show the correlations between these patterns, the existing controls, and the performance of the institutions. According to Junker (1979), this cannot be done unless the institutionalist position on the ceremonial-instrumental dichotomy is understood, which makes it the analysis tool for evaluating human behavior, at the cultural (not individual) level, and identifying its instrumental and ceremonial qualities (Waller, 1982).

Within institutions, instrumental (technological) behavior refers to a symbiotic, inseparable set of functions that increases human well-being, and ceremonial behavior refers to a symbiotic, inseparable set of functions that reduces it and expands the role of activities and social waste (Junker, 1982). Technological disorders have a very real influence on social problems (Foster, 1981b). Thus, the institutions comprise both ceremonial and instrumental behaviors, however, the result related to social well-being that the institution will be able to promote will depend on whether the correlated behavior is more oriented towards ceremonial or instrumental.

In this respect, it is important to emphasize that the members of an institution can oppose the instrumental behavior of adjusting to resolve a particular social problem when this adjustment decreases its position in terms of prestige - ceremonial behavior (Foster, 1981b). Thus, it remains clear that, in addition

to serving as an analysis of behavior, the ceremonial and instrumental aspects are co-existent and intertwined with the concept of institution. Consequently, an evaluative element appears.

In this context, market activities would represent the union of two sets of values: those that are “technological-instrumental” and those that are “ceremonial”. The values in the first set would be “true” or “objective”, and would emanate from the technological process and, therefore, be employed in activities that would improve life and be conducive to progress. The values of the second set would be “false” and derived from individual interests and from the existing structure and status of power, among other things, that is, they would tend to delay the development of human well-being (Ayres, 1944). However, to improve this well-being, there is a need for continuous adjustment of economic institutions. This raises the problem of determining a criterion on which a selection between alternatives can be made. This criterion must be the instrumental efficiency of the social and economic process, measured by its capacity to effectively improve the life process of humanity (Tilman, 1974).

Thus, the “correlation” of behavior in an institution would be prescribed by the value structure of society, that is, the values would function as criteria for the correlation of behavior within the institutional domain. Values can be ceremonial or instrumental. Customs and folklore guarantee ceremonial values in hierarchies of corporate status and “invidious” distinctions. They rationalize power relations and standards of authority embodied in the status quo. Instrumental values are guaranteed through the systematic application of knowledge to the problem-solving process. They emerge from the processes of investigating causal relationships (Bush, 1983).

Consequently, society’s value structure motivates the behavior adopted within an institution, and this behavior can be ceremonial or instrumental. Ceremonial behavior is motivated by ideas and concepts used and organized to sustain and legitimize oppression, forming a system of “master-servant relations and status”, while institutional behavior is “liberating” (Junker, 1982, p. 143). On the other hand, Wisman and Rozansky (1991) envision that prejudices of power, conflict, and vested interests end up being directed by institutionalists to the study of specific social contexts, as opposed to the generation of more general theories to show how they are interrelated. It also includes in its criticism the fact that institutionalists emphasize the plasticity of human behavior in cultural terms and place little emphasis on genetically inherited traits.

The dichotomy is also widely cited by Junker (1979, 1982, 1983), Foster (1981b), Busch (1983, 1987, 1989), and O’Hara, (2018) among others, in terms of the function of the institutions. The instrumental function would be represented by the group’s collaborative activity, on the other hand, the ceremonial function would be that which differentiates people and groups in “invidious” terms. “The chief can be identified in terms of his instrumental function, but he can also be identified in terms of prestige, honor, attitude of deference or power” (Foster, 1981b, p. 908). Instrumental functions involve promoting the joint stock of knowledge and skills, while ceremonial functions concern small groups that control the joint stock through “invidious” distinctions, such as class, gender, ethnic, and national disparities (O’Hara, 2018).

Finally, Junker (1983) describes the dichotomy in terms of relationships. For him, technological relations involve, at the same time, and as dimensions of each other:

- a) things - tools, symbols, machines
- b) skill - behavior with things in a productive way
- c) organization - coherence and integration of behavioral relations with things
- d) administration - decision-making about coherence and integration of behavioral relations with things
- e) control - general monitoring and adjustment of decision-making on the coherence and integration of behavioral relations with things and
- f) values - criteria that allow evaluating the general monitoring and adjustment of decision-making on coherence and integration of behavioral relations with things.

The result of this integrative system is the production of justified knowledge and the recognition that the production and the procedural consequences of verifiable knowledge necessarily involve all these elements. On the other hand, ceremonial relations are forces expressed through “repressive, obstructive, and exploratory institutions in the control of technology and science, so that there is a greater benefit to the powers invested than to the community at large” (Junker, 1983, p. 343).

Thus, instrumental institutions are those whose forces of knowledge are expressed through flexible and democratizing institutions controlling technology and science. These institutions expand knowledge guaranteed for the greater benefit of the community at large and can expand community accessibility and participation on a peer-to-peer basis. This process is known as liberation (Junker, 1983).

Consequently, it appears that behaviors are ethical in those institutions in which instrumental relations prevail, which does not necessarily occur in those in which ceremonial relations prevail (Junker, 1983). Even if it is discussed whether ethics is a class of institutions and social norms, (Stevenson, 2002) it is necessary to develop a more comprehensive moral and ethical basis for the social and institutional economy. This fact can improve the policy by providing detailed guidelines on the “good society” that we all want to develop. The concept of what is social and promotes the common good versus what is associative and against the common good is a mere starting point for this analysis (O’Hara, 2018).

Modernly, the discussion about the ceremonial-instrumental dichotomy in the context of institutions “leads to the interpretation that instrumental characteristics are problem-solving traits, while ceremonial characteristics are the questions that involve how things should be done to solve a problem” (Almeida and Pessali, 2017). And in the specific context of the company, instrumentalism is represented by the productive resources of the process, to shape a ceremonial result that are the productive services, compatible with what the entrepreneur imagines as sources of pecuniary gains, that is, the productive opportunities. Habits, values, and practices can then be addressed as ceremonial production issues. In addition to dealing with the company’s internal ceremonial and instrumental aspects, it is necessary to deal with the institutional set external to the company that is interconnected to this internal set and as such it also presents its instrumental-ceremonial dichotomy (Almeida and Pessali, 2017).

In this context, a common aspect of both institutionalist literature and its critics referred to the need to improve the technical dimensions of the analysis, so that the theory could advance. Whether through simple and dynamic mathematical forms or more sophisticated yet accessible methods of empirical analysis (Bush, 1983, Wisman and Rozansky 1991 O’Hara, 2018). Therefore, the efforts that are being made in this direction are presented below.

### **Methodologies Adhering to the Analysis of Scientific Problems in the Light of the Ceremonial - Instrumental Dichotomy**

Bush (1983) instrumentalized the OIT with its methodology of analysis. Its model uses the artificial language of graphics theory and emerges from the ceremonial-instrumental dichotomy. The model is established by 10 axioms and 7 theorems, demonstrating the complexity of the institutional structure and the central role values play in the correlation of behavior within this structure. In addition, the meanings of “technological innovation” and “institutional change” were deduced and applied to an analysis of changes in the institutional structure. Swaney, (1986) summarizes Bush’s model and suggests incorporating the interactions between socio-system and ecosystem at the same time.

In 1987 Bush brought together the classic foundations of the theory that were laid down by Veblen, Commons, Dewey, and Ayres. He added the contemporary refinements made by Foster, Dugger, Hamilton, Hayden, Junker, Klein, Mayhew, Neale, Ranson, and Tool to his model and called this body of knowledge The Theory of Institutional Change. Since then, his model has been tested empirically, as per Lacasa’s (2014) and Siu (2018) example.

In 1989, Bush embraced Swaney’s (1986) claim “Our prior discussion of non-ceremonial restrictions on progressive institutional change must be expanded to include Swaney’s “coevolutionary sustainability”. This does not mean that there are no ceremonial dimensions to maintain “coevolutionary sustainability”, as they exist. He adds: “In the current phase of our knowledge of these problems, it is not immediately clear how the planning of progressive institutional changes can bring us closer to” coevolutionary sustainability “. Thus, it establishes that the research agenda should accommodate these analyzes (Bush, 1989, p. 457).

Sturgeon, (2009) demonstrates that there is a synergistic relationship between Hayden’s Social Fabric Matrix (SFM) and Foster’s Principles of Institutional Adjustment (PIA). He demonstrated that recognized interdependence has patterns and that these can be very useful for both conceptual and empirical development. Along this line Elsner, (2012) proposed the mutual approximation of the Veblen-Ayres-

Foster-Bush (VAFB) and Evolutionary-Institutional Interpretation of Game Theory (EIGT) paradigms, as he understands that this approach will allow, namely: (1) a deeper logical analysis of institutions, (2) revealing the (hitherto) base of implicit value in EIGT, (3) a deeper analysis of instrumental-ceremonial asymmetry, (4) additional understanding of the ceremonial domain and encapsulation, and (5) further clarification of the institutionalist conception of policy.

Heinrich, (2017) recognizes that there are great differences between genetic evolution and the evolution of economic systems, however, guarding the appropriate differences, he argues that evolutionary models inspired by Darwinian theory may adequately represent economic reality and its natural complexity and that they can discover the mechanisms and regularities that drive the economy, especially taking into account technological advances, although it does not demonstrate how to operationalize this concept, in a way, it accepts Wisman and Rozansky's (1991) criticism.

Thus, the criticisms directed at institutional theory regarding the lack of a theoretical body capable of empirical application began to take shape. Giannakouros and Chen, (2018) point out that economists should reverse econometric programs to privilege the original institutionalist methods (it also includes Keynesian methods and those of pragmatist philosophy). Among several examples, they cite graphical analysis, statistical inferences, the R programming language, the GNU Emacs text editor, the LaTeX composition system, and support tools to form an integrated environment. The following shows how the ceremonial-instrumental dichotomy has been used to illuminate social problems and which methodological procedures have been used the most.

### Empirical Analysis of Problems Illuminated by Dichotomy

Empirical articles that used the dichotomy as an analytical lens, can be classified into quantitative and qualitative articles. The qualitative approach stands out with 13 of the 15 articles analyzed in this category. The quantitative approach is not so common in the analysis of problems that use the theoretical lens of institutional theory, although Russo and Guerreiro, (2017) and Tubadji and Nijkamp, (2018) have challenged this logic, using structural equation analysis and regression analysis, respectively.

**TABLE 2**  
**EMPIRICAL ARTICLES**

Author/Year	Methodology
Ezzamel (1997), Marire (2015)	Documentary analysis
Adams and Brunner (2003), Grolleau, Lakhali, and Mzoughi (2008), Schwardt (2011), Maslov and Volchik (2014), Cypher (2015), Papadopoulos (2015)	Historical narrative analysis
Elsner, Hocker and Schwardt (2010), Yetano (2013), Vo, Culié and Mounoud (2016)	Case studies
Lacasa (2014), Siu (2018)	Paul D. Busch model
Russo and Guerreiro (2017), Tubadji and Nijkamp (2018)	Quantitative

Source: by authors

Russo and Guerreiro (2017) proposed a construct for understanding the factors that act on the socio-materiality perceived by managers based on the ceremonial and or instrumentality of Management Accounting Practices (MAP) most used in large Brazilian non-financial organizations. They concluded that 61% of managers instrumentally use management accounting tools, that is, the technologies associated with MAPs are not only used to solve problems but also contribute to changing the context in which they are inserted. However, they did not analyze whether the changes generate greater well-being for society, which is one of the main objectives of the instrumental value of technology and the institutions that use it.

Tubadji and Nijkamp (2018) aimed to examine the impact of so-called cultural corridors in southeastern Europe on well-being and total employment at the local or regional level. The analysis used a regression model using a 2SLS instrumental variable (IV) approach, with a pooled data set at NUTS 3 (Eurostat) level

from 1980 to 2011. The main conclusion is that the distance from the cultural corridor under investigation strongly predicts local socio-economic development. And that both ceremonial (such as migration) and instrumental (such as innovation) aspects are present in this process. The ceremonial aspect would give rise to the regions and the instrumental one would be one of the main economic growth and development engines.

Among the qualitative analyzes, 3 studies used the case study. Elsner, Hocker, and Schwardt (2010), based on multiple case studies, developed the Organizational Triangle and emphasized that it can provide a simple framework to apply evolutionary-institutional analysis, including institutional dichotomy, the principle of social value and the theory of institutional change, in addition to measuring and mapping its results in the field of organizational forms and coordination systems. This article, as classified as methodological, responds to the aspirations of the institutionalist school, because employing a robust analysis technique, not only expands the theory but also suggests a new analysis technique.

Yetano, (2013) studies the adoption of measurement and performance management in an Australian city. It applies a longitudinal perspective considering ceremonial and instrumental dichotomy and of the theory of structuring. It concludes that local governments are adopting performance measurement and management more ceremonially than instrumentally. Vo, Culié, and Mounoud (2016) studied how employees of symbolic structures perceive a situation of decoupling and do their work, through a case study in a multinational company, which adopted the vision and implemented different tools and knowledge management practices (KM). A situation of dissociation was identified and ended up making KM a ceremonial facade. In this scenario, four possible experiences for managers were identified: imprisoned missionaries, recognized opportunists, disoriented fugitives, and safe servants.

Considering the ceremonial-instrumental dichotomy, the historical narrative approach is the most used. Adams and Brunner, (2003) use it to describe reforms in Nepal's financial sector, concluding that institutional obstructions remained powerful enough to contain technological innovation in the country's financial sector. Grolleau Lakhel and Mzoughi (2008) applied it in the context of obtaining fake diplomas and concluded that the diplomas serve both instrumental and ceremonial purposes. Diploma holders can be considered club members, as these documents give holders skills, signage, and status. Papadopoulos (2015) aimed to develop a theoretical framework for the study and integration of financial innovation in the institutional structures that support the functioning of the monetary system. His study culminated in presenting the context and principles for government regulation of financial innovation. He concluded that the cause of the monetary crisis was the neglect of institutional structures. These structures are permeated by ceremonial attitudes that ultimately led to the instability of the monetary system and the concentration of wealth and power in the hands of the financial sector.

Historical contextual analysis has also been widely used to describe the political development of countries or regions, in the light of dichotomy. Schwardt (2011) applies it to describe the situation in Argentina. It points to several ceremonial obstacles to the country's development and recommends that the institutional framework be constant to overcome ceremonial standards. This is a necessary condition for the long-term success of a political economy. Similarly, Maslov and Volchik (2014) apply it to explain the low level of development of the Russian Region called Dom Army and Cypher (2015) analyzes the period from 2003 to 2015, understood by some as a "neo-developmentalism" period in Brazil.

Based on documentary analysis of the original (translated) records of evidence from the New Kingdom (1552-1069 BC) in Ancient Egypt, Ezzamel, (1997) describes the practice of control in a bakery. His work suggests that accounting played an important role in legitimizing the authority and power of civil servants, particularly scribes, insofar as it ceremonially justified their social status.

Marire, (2015) used the same methodological procedure to examine the historical evolution of the institutions that facilitated the development of recreational trout fishing in South Africa. The main conclusions are: a) convergence of ceremonial interests of the government and the idle class, led to the design of institutions that facilitated the introduction of trout into the ecosystem; b) Lysenkoism shaped interests, even though fishing research had pointed out the invasive effects of trout, scientists recommended the widespread development of the fishing of this species; c) the presence of pecuniary emulation that came to recommend the deliberate extermination of Indigenous species to create a habitat for trout and d)

ceremonial systems are not always linked to the past, pecuniary emulation, by its very nature, has the effect of forcing institutional change for the realization of an “imagined” future. In the context in question: the future of South African waters well stocked with trout. Thus, it suggests that Paul D. Bush’s concept of institutional spaces can be extended.

Lacasa, (2014) uses the Bush model to analyze the generation and distribution of electricity in Germany. It concludes that although renewable energy technologies have spread, this has only occurred to a certain extent, as the powers behind the industry remain in dominant positions. Certain institutional learning can be observed with the policy instruments introduced, but even so, the system is far from being technologically transformed as it fully exploits the instrumental potential of renewable energy technologies. This means the encapsulation of the instrumental values that the cultivation of renewable energy could generate. On the other hand, Siu (2018), when analyzing the historical evolution of the leisure industry, concludes that the model proposed by Bush deserves a more in-depth examination in this context.

### The Ceremonial and Instrumental Dichotomy Within the Scope of Literature Reviews

The articles classified in this topic are not conceptual, since they do not develop or improve a specific concept and do not fall into the other categories already presented. Therefore, they were classified as literature reviews, as they rely on previous literature to respond to specific research problems.

**TABLE 3**  
**LITERATURE REVIEWS**

Author/Year	Title	Journal	Objective
Thompson (2008)	Worker Cooperatives in the Theory of the Firm: Marx and Veblen on Technological Determinism	Journal of Economic Issues	Analysis of the structure of workers’ cooperatives both in the light of the company’s classical theories and the light of classical institutional theory
Valentinov (2011)	The Meaning of Nonprofit Organization: Insights from Classical Institutionalism	Journal of Economic Issues	Analyze how non-profit entities are treated by classical institutional theory.
Hall, Lacasa and Gonther (2011)	Path Dependence and QWERTY’s Lock-In: Toward a Veblenian Interpretation	Journal of Economic Issues	Critically analyze Paul David’s article “ <i>Clio and the Economics of QWERTY</i> ” in the light of classical institutional theory.
Almeida (2018)	Revisiting “Institutions”: A Study of the Evolution of Institutional Analysis	<i>Journal of Economic Issues</i>	Review of the concept of institution
Garcia-Murillo and Macinnes (2019)	AIS Path to the Present and the Painful Transitions Along the Way	<i>Digital Policy, Regulation and Governance</i>	Analysis of technological evolution until the Artificial Intelligence event

Source: by authors

Almeida (2018) aimed to revisit the concept of institutions, which is a central concept in the analysis of OIT. Starting from the concept of Neale (1987) he points out that institutional analysis evolves with pragmatic philosophy and cognitive issues to understand the identification of institutions. In addition, he pointed out that several studies connect internal impulses to institutionalized habits and use Dewey to better understand the concept of habit. Furthermore, Neale (1987) referred to the current structure of the analysis of institutional change, while the articles in the sample, regarding the ceremonial-instrumental dichotomy, seem to focus mainly on the elucidation of certain concepts (and not strictly on offering another structure

of analysis.). Finally, he emphasized Hodgson's ascending and descending causes and Dolfsma's social value nexus.

Thompson, (2016) relies on the classic writings of the exponents of OIT and on the writings of the founders of the company's classic theory to analyze the structure of workers' cooperatives. The classic theory of the company is one in which the company is seen as a bundle of contracts and whose hierarchical management is necessary to impose coordination. On the other hand, for classical institutional theory, the company is based on competence and hierarchical management is necessary to deliver coordination. It is perceived that contrary to contemporary theories of the company, workers' cooperatives, besides having an inherent advantage in the implementation of bureaucratic organizational structures, especially about the instrumental benefits of technology and coordination, do not incur ceremonial disadvantages of behavior and cooperation. However, based on the notion of cumulative causality, it infers that this advantage may remain latent as long as the institutional environment remains hostile to the formation and success of workers' cooperatives. On the other hand, a contrary conclusion was presented by Valentinov, (2011). In analyzing how non-profit entities are treated by classical institutional theory, he concluded that the social meaning of the non-profit organization presents an unattainable instrumental value through the means of pecuniary ceremonial behavior incorporated in the for-profit sector.

Reflecting on the role of technology in urban development, Schlack, (1990) observes that cities are considered institutional systems that correlate instrumental and ceremonial patterns of human behavior and advances in proposing an urban development model that explicitly recognizes the dynamics of the technological process. Additionally, concerning technology, Hall, Lacasa, and Günther (2011) point out that Veblenian's notion of habituation in the use of a certain technology is the preponderant factor in explaining the power of its permanence in the long run. From another perspective, Garcia-Murillo and Macinnes, (2019) analyze the impact of Artificial Intelligence - AI at work. They point out that the transitions of the past were not well planned, since, even though in general society has benefited, many people and specific regions have suffered from massive job losses, increased violence, and depression. They envision that in the struggle between instrumental and ceremonial values, instrumental values will continue to evolve and boost AI, however, it is necessary to be aware of their impact at work and to find ways to alleviate their negative effects.

## **FINAL CONSIDERATIONS**

This article aimed to describe the main theoretical, analytical, methodological, and empirical contributions of the ceremonial-instrumental dichotomy of the Veblen-Ayres tradition. About their concept, it is important to highlight that although Veblen and Ayres developed the meanings of their terms and Ayres made it clear that it was a dichotomy and not a dualism, the term ceremonial-instrumental dichotomy began to be coined and considered as the analytical nucleus of institutional theory, from the 1980s onwards with the reinterpretations of the original writings. This does not change the fact that there is no way to discuss instrumentalism and ceremonialism without discussing culture, institutions, human behavior, and values, from a procedural perspective.

Ayres and Veblen developed the meaning of the terms ceremonial and technological (instrumental) as opposites in a continuum of behavior that generates institutional change. Both envisioned institutions completely oriented toward ceremonialism. Hence Veblen was more skeptical of an institutional evolution that was beneficial. Contrary, Ayres was more optimistic in this regard, he argued that economic progress would be possible, the more instrumentalism-oriented institutions were. Thus, the concept of institution is no longer monistic, that is, purely ceremonial, to embrace the ceremonial-instrumental dichotomy, that is, institutions are prescribed patterns of human behavior correlated with (a) ceremonial and (b) instrumental aspects."

Based on this concept, it is important to explain what is meant by "ceremonial" and what is meant by "instrumental" separately. However, both aspects must always be analyzed symbiotically, since they are inextricably related. They are part of a whole present both in human behavior and in institutional values. For Ayres, instrumental function was derived from technological progress generated by the combination of



skills and tools and, consequently, was always positive. However, it was later postulated that technological progress could be encapsulated by “invidious” institutions, the result of which would not increase social welfare (Junker, 1983). Refinements, in theory, have implied that for something to be instrumental, it must necessarily generate social well-being consequently, and ceremonial would be the characteristic attributed to everything hindering that well-being. Thus, technological evolution cannot always be characterized as instrumental. Modernly, the instrumental characteristics of institutionalized procedures are concerned with achieving a practical result, and the central question is what is achieved. Ceremonial characteristics concern how results can be achieved under the influence of ubiquitous habits and institutions.

From the amplitude of this concept, there are many new theoretical and analytical issues on the institutional agenda, such as Swaney’s co-evolutionary sustainability (1986), and the development of the role of ethics and morals in O’Hara institutions (2018). Another suggestion for very pertinent future research is to assess the consequences of the pandemic considering the dichotomy, seeking to identify how the different nations, considering cultural differences, affected institutional adjustments and the results for those more instrumental policies vs. ceremonial public policies. Another relevant context that deserves attention is technological innovation in terms of the economic complexity emphasized by Elsner (2018). Finally, it is recommended to use the dichotomy to illuminate large corporations’ Environmental, Social, and Corporate Governance (ESG) practices.

In the methodological field, institutionalist thinking has the potential to deductively generate formulated models that culminate in robust analytical and predictive work. But that potential still awaits exploration (Bush 1983). As noted in this SLR, the methods employed are still limited to documentary analysis, narratives, and case studies. A suggestion for innovative methodological applications is the suggestions of Sturgeon (2009), Elsner (2012), and Heinrich (2017) and to continue to improve and extend the Theory of Paul D. Bush (1987).

## REFERENCES

- Adams, J., & Brunner, H.P. (2003). Technology and institutions in the process of economic reform: Achieving growth with poverty reduction in South Asia. *Journal of Economic Issues*, 37(2), 363–369. <https://doi.org/10.1080/00213624.2003.11506583>
- Almeida, F., & Pessali, H. (2017). Revisiting the evolutionism of Edith Penrose’s *The theory of the growth of the firm*: Penrose’s entrepreneur meets Veblenian institutions. *Economia*, 18(3), 298–309. <https://doi.org/10.1016/j.econ.2017.03.002>
- Ayres, C.E. (1944). *The theory of economic progress*. The University of North Carolina Press.
- Ayres, C.E. (1996 [1944]). *The theory of economic progress*. Retrieved from [https://afee.net/downloads/AFEEbooks/AYRES\\_TEP/TEPHome.htm](https://afee.net/downloads/AFEEbooks/AYRES_TEP/TEPHome.htm)
- Böck, R., & Almeida, F. (2018). Clarence Ayres, Ayresianos e a evolução do institucionalismo Vebleniano. *Economia e Sociedade*, 27(63), 381–407.
- Bush, P.D. (1983). An exploration of the structural characteristics of a Veblen-Ayres-Foster defined institutional domain. *Journal of Economic Issues*, 17(1), 35–66. <https://doi.org/10.1080/00213624.1983.11504088>
- Bush, P.D. (1987). The theory of institutional change. *Journal of Economic Issues*, 21(3), 1075–1116.
- Bush, P.D. (1989). The concept of “progressive” institutional change and its implications for economic policy formation. *Journal of Economic Issues*, 23(2), 455–464. <https://doi.org/10.1080/00213624.1989.11504911>
- Cypher, J.M. (2015). Emerging contradictions of Brazil’s neo-developmentalism: Precarious growth, redistribution, and deindustrialization. *Journal of Economic Issues*, 49(3), 617–648. <https://doi.org/10.1080/00213624.2015.1071961>
- De Gregori, T.R. (1977). Technology and ceremonial behavior: Aspects of institutionalism. *Journal of Economic Issues*, 11(4), 861–870. <https://doi.org/10.1080/00213624.1977.11503489>
- Dugger, W.M. (1995). Veblenian institutionalism: The changing concepts of inquiry. *Journal of Economic Issues*, 29(4), 1013–1027. <https://doi.org/10.1080/00213624.1995.11505737>

- Elsner, W. (2012). The theory of institutional change revisited: The institutional dichotomy, its dynamic, and its policy implications in a more formal analysis. *Journal of Economic Issues*, 46(1), 1–43. <https://doi.org/10.2753/JEI0021-3624460101>
- Elsner, W. (2018). Complexity and innovation: Why beneficial effects of innovation highly depend. *Journal of Institutional Studies*, 10(4), 007–019. <https://doi.org/10.17835/2076-6297.2018.10.4.007-019>
- Elsner, W., Hocker, G., & Schwardt, H. (2010). Simplistic vs. complex organization: Markets, hierarchies, and networks in an organizational triangle — A simple heuristic to analyze real-world organizational forms. *Journal of Economic Issues*, 44(1), 1–30. <https://doi.org/10.2753/JEI0021-3624440101>
- Ezzamel, M. (1997). Accounting, control, and accountability: Preliminary evidence from ancient Egypt. *Critical Perspectives on Accounting*, 8(6), 563–601. <https://doi.org/10.1006/cpac.1997.0123>
- Foster, J.F. (1981a). John Dewey e valor econômico. *Journal of Economic Issues*, 15(4), 871–897.
- Foster, J.F. (1981b). The effect of technology on institutions. *Journal of Economic Issues*, 15(4), 907–913. <https://doi.org/10.1080/00213624.1981.11503914>
- Garcia-Murillo, M., & MacInnes, I. (2019). AI's path to the present and the painful transitions along the way. *Digital Policy, Regulation and Governance*, 21(3), 305–321. <https://doi.org/10.1108/DPRG-09-2018-0051>
- Giannakouros, P., & Chen, L. (2018). A problem-solving approach to data analysis for economics. *Forum for Social Economics*, 47(1), 87–114. <https://doi.org/10.1080/07360932.2015.1078737>
- Grolleau, G., Lakhali, T., & Mzoughi, N. (2008). An introduction to the economics of fake degrees. *Journal of Economic Issues*, 42(3), 673–694. <https://doi.org/10.1080/00213624.2008.11507173>
- Hall, J., Lacasa, I.D., & Günther, J. (2011). Path dependence and QWERTY's lock-in: Toward a Veblenian interpretation. *Journal of Economic Issues*, 45(2), 457–464. <https://doi.org/10.2753/JEI0021-3624450223>
- Hamilton, W.H. (1919). The institutional approach to economic theory. *The American Economic Review*, 9(1), 309–318.
- Heinrich, T. (2017). The narrow and broad approaches to evolutionary modeling in economics. *Journal of Economic Issues*, 51(2), 383–391. <https://doi.org/10.1080/00213624.2017.1320912>
- Hielscher, S., Pies, I., & Valentinov, V. (2012). How to foster social progress: An ordonomic perspective on progressive institutional change. *Journal of Economic Issues*, 46(3), 779–798. <https://doi.org/10.2753/JEI0021-3624460310>
- Junker, L. (1979). Genuine or spurious institutionalism? Veblen and Ayres seen from a neo-classical perspective raise the question. *American Journal of Economics and Sociology*, 38(2), 207–223.
- Junker, L. (1982). The ceremonial-instrumental dichotomy in institutional analysis: The nature, scope and radical implications of the conflicting systems. *The American Journal of Economics and Sociology*, 41(2), 141–150.
- Junker, L. (1983). The conflict between the scientific-technological process and malignant ceremonialism. *The American Journal of Economics and Sociology*, 42(3), 341–352.
- Lacasa, I.D. (2014). Ceremonial encapsulation and the diffusion of renewable energy technology in Germany. *Journal of Economic Issues*, 48(4), 1073–1093. <https://doi.org/10.2753/JEI0021-3624480410>
- Levy, Y., & Ellis, T.J. (2006). A systems approach to conduct an effective literature review in support of information systems research. *Informing Science*, 9, 181–211.
- Marire, J. (2015). The political economy of South African trout fisheries. *Journal of Economic Issues*, 49(1), 47–70. <https://doi.org/10.1080/00213624.2015.1013878>
- Maslov, A., & Volchik, V. (2014). Institutions and lagging development: The case of the Don army region. *Journal of Economic Issues*, 48(3), 727–742. <https://doi.org/10.2753/JEI0021-3624480307>
- Minayo, M.C.S. (2002). *El desafío del conocimiento: Investigación cualitativa en salud* (9th Ed.).

- Natarajan, T., Elsner, W., & Fullwiller, S.T. (2009). *Institutional analysis and praxis: The social fabric matrix approach*. Springer. <https://doi.org/10.1007/978-0-387-88741-8>
- Papadopoulos, G. (2015). Expanding on ceremonial encapsulation: The case of financial innovation. *Journal of Economic Issues*, 49(1), 127–142. <https://doi.org/10.1080/00213624.2015.1013883>
- Russo, P., & Guerreiro, R. (2017). Percepção sobre a sociomaterialidade das práticas de contabilidade gerencial. *Revista de Administração de Empresas RAE*, 57(6), 567–584.
- Schlack, R.F. (1990). Urban economies and economic heterodoxy. *Journal of Economic Issues*, 24(1), 17–47.
- Schwardt, H. (2011). The development trajectory of the Argentine economy since 1976: An Ayresian perspective. *Journal of Economic Issues*, 45(2), 431–438. <https://doi.org/10.2753/JEI0021-3624450220>
- Stevenson, R. (2002). An ethical basis for institutional economics. *Journal of Economic Issues*, 36(2), 263–277. <https://doi.org/10.1080/00213624.2002.11506469>
- Strassmann, W.P. (1974). Technology: A culture trait, a logical category, or virtue itself? *Journal of Economic Issues*, 8(4), 671–687.
- Swaney, J.A. (1981). Externality and community. *Journal of Economic Issues*, 15(3), 615–627. <https://doi.org/10.1080/00213624.1981.11503879>
- Swaney, J.A. (1986). A coevolutionary model of structural change. *Journal of Economic Issues*, 20(2), 393–401. <https://doi.org/10.1080/00213624.1986.11504510>
- Thompson, S. (2016). Worker cooperatives in the theory of the firm: Marx and Veblen on technological determinism. *Journal of Economic Issues*, 50(4), 913–939. <https://doi.org/10.1080/00213624.2016.1249743>
- Tilman, R. (1974). Value theory, planning, and reform: Ayres as incrementalist and utopian. *Journal of Economic Issues*, 8(4), 689–706. <https://doi.org/10.1080/00213624.1974.11503223>
- Tubadji, A., & Nijkamp, P. (2018). Cultural corridors: An analysis of persistence in impacts on local development—A Neo-Weberian perspective on South-East Europe. *Journal of Economic Issues*, 52(1), 173–204. <https://doi.org/10.1080/00213624.2018.1430948>
- Valentinov, V. (2011). The meaning of nonprofit organization: Insights from classical institutionalism. *Journal of Economic Issues*, 45(4), 901–915. <https://doi.org/10.2753/JEI0021-3624450408>
- Veblen, T. (1904). *The theory of business enterprise*. New York, NY: Charles Scribner's Sons.
- Veblen, T. (2007). *The theory of the leisure class* (Original work published 1899). New York, NY: Oxford University Press.
- Vo, L.C., Culié, J.D., & Mounoud, E. (2016). Microfoundations of decoupling: From a coping theory perspective. *Management (France)*, 19(4), 248–276. <https://doi.org/10.3917/mana.194.0248>
- Waller, W.T. (1982). The evolution of the Veblenian dichotomy: Veblen, Hamilton, Ayres, and Foster. *Journal of Economic Issues*, 16(3), 757–771. <https://doi.org/10.4324/9781315494258>
- Webster, J., & Watson, R.T. (2002). Analyzing the past to prepare the future. *MIS Quarterly*, 26(2), xiii–xxiii.
- Wisman, J., & Rozansky, J. (1991). The methodology of institutionalism revisited. *Journal of Economic Issues*, 25(3), 709–737.
- Yetano, A. (2013). What drives the institutionalization of performance measurement and management in local government? *Public Performance and Management Review*, 37(1), 59–86. <https://doi.org/10.2753/PMR1530-9576370103>

APPENDIX

**TABLE 4**  
**SYSTEMATIC LITERATURE REVIEW ARTICLES**

ID	Author/year	Title	Journal	Classification
1	Ayres (1944)	The Theory of Economic Progress	Book	Conceptual
2	De Gregori (1977)	Technology and ceremonial behavior: aspects of institutionalism	Journal of Economic Issues	Conceptual
3	Junker (1979)	Genuine or spurious institutionalism? Veblen and Ayres seen from a neoclassical perspective raise the question.	American Journal of Economics and Sociology	Conceptual
4	Foster (1981)	The effect of technology on institutions	Journal of Economic Issues	Conceptual
5	Swaney (1981)	Externality and community	Journal of Economic Issues	Conceptual
6	Junker (1982)	The ceremonial instrumental dichotomy in institutional analysis: the nature, scope and radical implications of the conflicting systems	American Journal of Economics and Sociology	Conceptual
7	Waller (1982)	The evolution of the Veblenian dichotomy: Veblen, Hamilton, Ayres, and Foster	Journal of Economic Issues	Conceptual
8	Junker (1983)	The conflict between the scientific-technological process and malignant ceremonialism	American Journal of Economics and Sociology	Conceptual
9	Wisman and Rozansky (1991)	The methodology of institutionalism revisited	Journal of Economic Issues	Conceptual
10	Dugger (1995)	Veblenian institutionalism: the changing concepts of inquiry	Journal of Economic Issues	Conceptual
11	Stevenson (2002)	An ethical basis for institutional economics	Journal of Economic Issues	Conceptual
12	Hielscher, Pies and Valentinov (2012)	How to Foster social progress: an Ordonomic perspective on progressive institutional change	Journal of Economic Issues	Conceptual
13	O'Hara (2018)	Merging Dugger's concepts with Ohara's principles to advance social and institutional economics	Forum for Social Economics	Conceptual
14	Elsner (2018)	Complexity and innovation. Why beneficial effects of innovation highly depend	Journal of Economic Issues	Conceptual
15	Dolfsma (2019)	Institutionalized Communication in Markets and Firms	Journal of Economic Issues	Conceptual
16	Almeida and Pessali (2017)	Revisiting the Evolutionism of Edith Penrose's the Theory of the Growth of the Firm: Penrose's Entrepreneur Meets Veblenian Institutions	Journal of Economic Issues	Conceptual

17	Tilman (1974)	Value Theory, Planning, and Reform: Ayres as Incrementalist and Utopian	Journal of Economic Issues	Conceptual
ID	Author/year	Title	Journal	Classification
18	Bush (1983)	An Exploration of the Structural Characteristics of a Veblen-Ayres-Foster Defined Institutional Domain	Journal of Economic Issues	Methodological
19	Swaney (1986)	A Coevolutionary Model of Structural Change	Journal of Economic Issues	Methodological
20	Bush (1987)	The Theory of Institutional Change	Journal of Economic Issues	Methodological
21	Busch (1989)	The Concept of “Progressive” Institutional Change and Its Implications for Economic Policy Formation	Journal of Economic Issues	Methodological
22	Sturgeon (2009)	The social fabric matrix, the principles of institutional adjustment, and individual action	Institutional Analysis and Praxis (capítulo de livro)	Methodological
23	Elsner (2012)	The effect of technology on institutions	Journal of Economic Issues	Methodological
24	Heinrich (2017)	The Narrow and Broad Approaches to Evolutionary Modeling in Economics	Journal of Economic Issues	Methodological
25	Giannakouros and Chen (2018)	A Problem-Solving Approach to Data Analysis for Economics	Forum for Social Economics	Methodological
26	Ezzamel (1997)	Accounting, Control, and Accountability: Preliminary Evidence from Ancient Egypt	Journal of Economic Issues	Empirical
27	Adams and Brunner (2003)	Technology and Institutions in the Process of Economic Reform: Achieving Growth with Poverty Reduction in South Asia	Journal of Economic Issues	Empirical
28	Grolleau, Lakhali, and Mzoughi (2008)	An Introduction to the Economics of Fake Degrees	Journal of Economic Issues	Empirical
29	Elsner, Hocker and Schwardt (2010)	Simplistic vs. Complex Organization: Markets, Hierarchies, and Networks in an Organizational Triangle - a Simple Heuristic to Analyze Real-World Organizational Forms	Journal of Economic Issues	Empirical
30	Schwardt (2011)	The Development Trajectory of the Argentine Economy Since 1976: an Ayresian Perspective	Journal of Economic Issues	Empirical
31	Yetano (2013)	What Drives the Institutionalization of Performance Measurement and Management in Local Government?	Public Performance and Management Review	Empirical
32	Lacasa (2014)	Ceremonial Encapsulation and the Diffusion of Renewable Energy Technology in Germany	Journal of Economic Issues	Empirical

33	Maslov and Volchik (2014)	Institutions and Lagging Development: The Case of the Don Army Region	Journal of Economic Issues	Empirical
ID	Author/year	Title	Journal	Classification
34	Cypher (2015)	Emerging Contradictions of Brazil's Neo-Developmentalism: Precarious Growth, Redistribution, and Deindustrialization	Journal of Economic Issues	Empirical
35	Marire (2015)	The Political Economy of South African Trout Fisheries	Journal of Economic Issues	Empirical
36	Papadopoulos (2015)	Expanding on Ceremonial Encapsulation: The Case of Financial Innovation	Journal of Economic Issues	Empirical
37	Vo, Culi and Mounoud (2016)	Microfoundations of Decoupling: From a Coping Theory Perspective	Journal of Economic Issues	Empirical
38	Russo and Guerreiro (2017)	Perceptions about the Sociomateriality of Management Accounting Practices	RAE Revista de Administração de Empresas	Empirical
39	Siu (2018)	Institutional Change and the Evolution of the World Leisure Industries	Journal of Economic Issues	Empirical
40	Tubadji and Nijkamp (2018)	Cultural Corridors: An Analysis of Persistence in Impacts on Local Development — A Neo-Weberian Perspective on South-East Europe	Journal of Economic Issues	Empirical
41	Valentinov (2011)	The Meaning of Nonprofit Organization: Insights from Classical Institutionalism	Journal of Economic Issues	Literature review
42	Hall, Lacasa and Günther (2011)	Path Dependence and QWERTY's Lock-In: Toward a Veblenian Interpretation	Journal of Economic Issues	Literature review
43	Thompson (2008)	Worker Cooperatives in the Theory of the Firm: Marx and Veblen on Technological Determinism	Journal of Economic Issues	Literature review
44	Almeida (2018)	Revisiting "Institutions": A Study of the Evolution of Institutional Analysis	Journal of Economic Issues	Literature review
45	Garcia-Murillo and Macinnes (2019)	AIS Path to the Present and the Painful Transitions Along the Way	Digital Policy, Regulation and Governance	Literature review