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Replicability: 21st Century Crisis of The Positivist Social Sciences*

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Abstract:
Replicability in social research forms the essence of the positivist attempt to discover the universal and self-supporting method of the exploration of "truth". However, the principle of replication as a meta-judge which is regarded as the legitimate baseline of science raises certain difficulties where the object of research is not independent of the researcher. The replication crisis is an ongoing methodological crisis that has emerged as a result of the failure of experiments on the repetition of social psychology-based studies. The crisis has deeply shaken the medical, natural, social, and further positivist sciences which in general work with the replicability principle. The aim of this paper is to identify the replicability issue as the latest methodological discussion in the social sciences in line with the critiques of positivism that marked the 20th century to demonstrate which scholars and schools of thought criticized the positivistic principles of replicability and universality, and to show whether these principles are still a topic of debate in 21st century social sciences. As a result of the study, it is concluded that positivist claims: replication and universality principles lose their validity in sociology due to ontological, epistemological, individual and structural aspects.

Keywords: *Replication, replication crisis, positivism, universalism.*

Öz:
Sosyal araştırmalarda tekrarlanabilirlik, evrensel ve kendi kendini destekleyen (doğrulayan) yöntem ile "hakikati" keşfetmeye yönelik pozitivist girişimin özünü oluşturur. Ancak, bilimin meşru temeli olarak kabul edilen bir meta-yargıç olarak tekrarlanabilirlik ilkesi, araştırma nesnesinin araştırmacıdan bağımsız olmadığı durumlarda belirli zorluklar ortaya çıkarmaktadır. Tekrarlanabilirlik krizi, sosyal psikoloji temelli çalışmaların tekrarı üzerine yapılan deneylerin başarısız olması sonucu ortaya çıkmış, süregelen bir metodolojik krizdir. Kriz, genel olarak tekrarlanabilirlik ilkesiyle çalışan tıbbi, doğal, sosyal ve diğer pozitivist bilimleri derinden sarsmıştır. Bu makalenin amacı, 20. yüzyıla damgasını vuran pozitivizm eleştirileri doğrultusunda sosyal bilimlerdeki en son metodolojik tartışma olarak tekrarlanabilirlik konusunu tespit etmek, pozitivist tekrarlanabilirlik ve evrensellik ilkelerini hangi düşünürlerin ve düşünce okullarının eleştirdiğini ortaya koymak ve bu ilkelerin 21. yüzyıl sosyal

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bilimlerde hala bir tartışma konusu olup olmadığını göstermektir. Çalışmanın sonucunda pozitivist iddiaların: tekrarlanma ve evrensellik ilkelerinin sosyolojide ontolojik, epistemolojik, bireysel ve yapısal yönlerden geçerliliğini yitirdiği sonucuna varılmıştır.

Anahtar Kelimeler: *Tekrarlanabilirlik, tekrarlanabilirlik krizi, pozitivizm, evrensellik.*

INTRODUCTION

Replicability is the most fundamental principle of natural sciences, social sciences, the philosophy of science and science studies, and it is considered the quintessential criterion that separates science from pseudoscience. For social sciences that are based on positivist methodology and the imitation of natural sciences, replication provides a guarantee of universality, universal knowledge, truth, and most importantly, reliability. Since replication is a philosophical presumption embedded in all scientific practices, it brings with it multiple interpretations. For example, for pharmacology and medical science replication acts as a safety mechanism to detect the chemical properties of drugs and to show how successful they are in eliminating diseases (Pusztai et al., 2013, p. 720). Therefore, medical experiments and research have to be repeated multiple times, all the while producing the same results. Replication, which is also considered one of the most crucial principles for computer science, is integral for testing the reliability of software and is deemed essential from even the smallest operating mechanisms to the security of governments, banks, and financial systems (Peng 2011, p. 1226). Sciences where replication has not been successful have the potential to cause major social, economic, and political chaos.

However, for social sciences, replication is manifested in a very complex manner and replication starts with completely different assumptions, especially in fields such as sociology, psychology, anthropology, and history where human factors are highly involved. On the other hand, the principle of replicability is directly linked to the principle of universality. Positivist methodology aims to discover the truth by reaching universal laws that are based on replicable data (Clark, 1998, p. 1244). This dualism is a reflection of the natural sciences embedded in the history of social research. The Comteian formulation of sciences stated the criteria of the social sciences and sociology and the 20th century philosophy of social sciences dedicated itself to finding absolute/unified methods in social research. In this respect, positivism is constructed as a framework that unites the paradigms of both natural and social sciences and, with the claim of universal methodology, positivism combines social sciences in the field of research with a fundamental principle: replicability as a common denominator.

Replicability in social research forms the essence of the positivist attempt to discover the universal and self-supporting method of the exploration of truth. However, the principle of replication as a meta-judge which is regarded as the legitimate baseline of science raises certain difficulties where the object of research is not independent of the researcher. With the question; “Replication of What and by Whom?,” Hans Radder (1996, p. 16) stressed that all social scientists philosophically accept that research is reproducible but that repetitive research is determined by very superficial frameworks whose complex processes remain unknown. Within the social sciences and in line with positivist doctrine, it is determined that there is a large gap between the principle of replicability as a scientific criterion and the studies that are actually carried out. In other words, although positivist social sciences theoretically adopt the principle of replicability, it is observed that there are almost no repeated sociological studies. As a methodological principle, this gap between theory and practice requires a close analysis.

Therefore, this study will focus on the possibility of the replicability principle in the social sciences and the reasons why replicability, which is the basic principle of positivism that gave sociology a scientific legitimacy, almost never materializes.

In fact, the Replication Crisis is closely related to Proteus Phenomena, which appeared in 2005, about 7 years before the actual crisis. By using the name of the ever-changing ancient Greek god Proteus, Ioannidis and Trikalinos (2005) realized that the replication of previous scientific studies was consistently unsuccessful and claimed that this disorder is not limited to certain studies and reflects a general tendency in science. The term later became widespread in scientific circles and this event heralded the 2010 Replication Crisis. Apart from these, there is also a group representing the minority and their claims that the replication crisis is not real and the situation is exaggerated due to differences of intent (Amrhein et al., 2018, p. 263). However, based on widespread surveys, my assertion is that there is a remarkable and ongoing replication crisis in science. Furthermore, Nature's survey of 1,576 researchers by means of an online questionnaire revealed that 90% of respondents think that there is replication crisis in science (Baker, 2016).

The replication crisis has become a crisis that concerns not only the academic community, but also citizens and policy-makers especially, endangering technological investment and trust in all scientific fields, including the medical field. The crisis undermines public trust in social sciences and opens a road to the formation of opinions both in public and political communities that social sciences fail to provide reliable information. This has become a situation that undermines the ethos of scientific enterprise. The loss of credibility and legitimacy of science, which is now regarded as the greatest authority of human invention, can have dangerous consequences for humanity and raises the question of what will fill the gap left by science. This constitutes the rationale of the proposed work. If any of a crisis is to be mentioned, this cannot be left to the interpretations of non-scientific institutions. It is the science itself that will/should carry out this examination. It is valued that addressing the crisis thru constructive critique will further fortify the scientific telos.

Purpose of the Study

The aim of this paper is to identify the replicability issue as the latest methodological discussion in the social sciences in line with the critiques of positivism that marked the 20th century to demonstrate which scholars and schools of thought criticized the positivistic principles of replicability and universality, and to show whether these principles are still a topic of debate in 21st century social sciences. The critique of positivism has been widely realized in the 20th century and there is ample literature on the subject. Therefore, it is important to find out what is new for the methodology of the social sciences. What are the main discussions about the replicability principle in the 21st century? What's new? and What are the validity of the proposed solutions?

METHODOLOGICAL CONSIDERATIONS

Theoretical studies in the social sciences differ from each other based on their understanding, imagination, and construction of society. In sociology, the subject of research and levels of acceptance have constituted the source of the differentiation between approaches. Regardless of answers we are faced with the same concern: how is society understood? The distinction between macro and micro theories also determines the type of variables that are to be addressed in the effort to understand society (Berger et al., 1989, p. 3). For this reason, theoretical studies

are of great importance in both science and practice. Theory will develop, perfect itself, and try to be more useful to practice by constantly experimenting with practical applications. This process will continue successfully with the positive coupling of theory and practice. It is essential to question the prevailing theoretical frameworks of social sciences especially sociology and to criticize the mainstream epistemological and methodological tendencies such as positivism. In this theoretical study, criticism regarding the positivistic universalized knowledge that is gathered from replicable data will be voiced. This work will search an answer to the following question: "What is the sociological critique of positivist methodology that aims to achieve universal knowledge with the principle of replicability?". Considering the principles of replicability and universality that have been subjected to intense criticism in the period between the construction of positivism and the replication crisis, and especially the discussion that arose with the replication crisis after 2010 is evaluated, it is possible to construct the hypothesis of this research as follows: "Replicability and universality as the basic principles of positivist social scientific methodology, cannot be applied to sociological research". By the term "applied" it is here emphasized that it cannot be seen as a criterion that determines the reliability of research and separates science from non-science.

REPLICATION CRISIS: CURRENT DEBATE IN THE METHODOLOGY OF SOCIAL SCIENCES (2000s-……)

With regard to theory, many schools of thought have argued that replication is not valid for the social sciences. The extent to which these criticisms were justified came to life in practice with the replication crisis that erupted during the 2000s. The replication crisis is an ongoing methodological crisis that has emerged as a result of the failure of experiments on the repetition of social psychology-based studies. The crisis has deeply shaken the medical, natural, social, and all positivist sciences which in general work with the replicability principle. The term, produced in 2010, has currently become a crisis affecting all of academia. Studies in the fields of meta-science and philosophy of science have led to discussions on the extent to which replication is scientifically available. Since the reproducibility of experiments is an important part of the scientific method, there are potentially serious consequences for many disciplines in which important theories are based on empirical studies that cannot be reproduced.

Background of the Crisis

The replication crisis began with the failure of repetition of a series of medical and socio-psychological studies and the publication of the results in journals. In 2012, Biotechnology Company announced that it was unable to repeat the experiments of selected publications and company researchers stated that they could not repeat 90% of the 53 high-profile published oncology articles from the most respected journals in the world (Bayram, 2016). Even if scientific deviation is taken into consideration, the ratio was still high enough that the company chose to present these findings quickly to the public and published its data in February 2016 on its website F1000Research. Besides that, a meta-analysis by Makel, Plucker, and Hegarty (2012) revealed that only 1% of the psychological studies published since the early 20th century were replicable. This was a very low figure and it strongly suggests that most of the results obtained from isolated studies cannot be reproduced. Apart from this, in 2015, The Reproducibility Project, led by the Open Science Collaboration, headed by Brian Nosek from the University of Virginia's Department of Psychology, revealed that only 39% of the 100-research conducted in the field of psychology are consistent and reproducible ("Open Science Collaboration", 2015). Once again, the article, published in the February 11 2016 issue of Nature, brought the public's attention to the topic of the legitimacy of the replicability principle:

the methodological strife that scientists have been discussing for a long time ("Challenges in irreproducible research" 2018). The study conducted by Hagger & Chatzisrantis (2016) on the phenomenon of ego depletion in 2016 (involving 23 labs and more than 2000 subjects) failed to replicate results of a previously published experiment. Richard Horton (2015), editor of the medical journal The Lancet, published an article in the April 11th 2015 issue, argued that errors in replicability and reliability of biomedical research expose the idea that something is fundamentally wrong in one of the greatest human inventions: science

The crisis manifested itself in the conclusion that 90% of the research reports published in the psychology, social psychology, and medical journals are not repeatable. Thus, it was understood that they have been violating one of the most fundamental rules of scientific method, namely that research should be repeated by independent observers under the same conditions. In a short time, it was seen that the problem was not only unique to psychology, but that the principle of replicability creates functional problems in all scientific disciplines that investigate social phenomena.

EVALUATION OF THE REPLICATION CRISIS FROM A POSITIVIST SOCIAL SCIENTIFIC AND SOCIOLOGICAL PERSPECTIVE

Although the validity of positivism in the social sciences has been considered, it has been discussed from the path of sociology and how society should be studied. The criticisms of positivism by different sociologists are illustrated in the above sections. In this section, the effects of the recent replication crisis in sociology are discussed. Some post-crisis scientists limited the crisis only to psychology and claimed that it was unnecessary to include all of the social sciences in this crisis. In contrast, I argue that this crisis has profoundly affected all social sciences and sociology in particular. Replicability is not only a technical formality, but also the most important criterion that gives sociology legitimacy. "The criterion for judging the status of sociology as science is to consider its ability to accumulate consistent evidence" (Gaston and Zelditch, 1979, p. 791). The discussion of the crisis of replicability from the positivist sociological front will also automatically exclude the ideal of achieving universal law through repetition. According to Freese, the crisis of replication is not only a methodological crisis limited to psychology, but also an important chain of scientific criticisms that sociologists should be extremely interested in (Freese 2014).

Hacking (1983) emphasized that replication is only a philosophical pseudo-problem, that no one ever does any repetition, and that what is done is not to strengthen the accuracy of the original work, but to improve the researcher's own cognitive level and the technological capacity of the lab environment. In addition, Lucas et al. (2013) discussed the effects of the replicability problem on sociology in a comprehensive way, and stated that sociology adopted the principle of replicability (just for the sake of formality and legitimacy) as one in line with positivist methodology, but in contrast there were very few repeated studies observed throughout the history of sociological research (Lucas et al., 2013, p. 220). In the analysis of 48 sociology journal issues, Gaston and Zelditch (1979) concluded that sociologists are hesitant to replicate previous studies. The percentage of replications or quasi-replications in the hundreds of papers within the 48 issues was no more than 2-3% (Gaston & Zelditch, 1979, p. 791). Furthermore, Peterson et al. (2017) indicated that there were only 27 sociology articles with the "replication" title published in the last 25 years. Various reasons are given for this deficiency. In this section, the reasons why replication studies are not frequently encountered

in sociology and why the positivist principle of replication cannot be a valid criterion for sociology are examined.

Ambiguity: Replication by Falsification

Replicability is an important criterion for sociology. As Peels (2019) points out, the term replicability is used in different ways with regard to the social sciences. The following section will proceed with the definition of sociological replicability that was mentioned in the previous chapter - "Replication with a new data collection and with the same research protocol and the same research question as the original study." (Peels, 2019, p. 3). This is a necessary process for verifying or falsifying a theoretical claim. Popper's idea is based on the principle of replicability where the function is for the theory to be abandoned and to be brought into line with new observational evidence. In other words, according to Popper, replicability is the most important milestone of knowledge and science, and theories could be falsified only if a replicable effect which refutes the theory is discovered (Popper, 1963, p. 36). To begin, my assertion is that the Popperian model of falsification is not valid for sociological knowledge production. Suppose, for example, that a sociologist wants to determine if there is a relationship between the group of people that is identified as the phenomenon "A" and "B". The sociologist immediately hypothesizes to test the theory and conduct a research study to determine the relationship between A and B. As a result of the research, the sociologist, seeing that there is no relationship, immediately reformulates his hypothesis. For the sociologist, this result does not indicate that there is no relationship. On the contrary, the issue is with his/her inability to adequately identify all the dependent and independent variables. S/he does his/her research again and observes that there is still no relationship. By assuming that the results stem from his/her own incompetence, the researcher takes into account that there may be hidden, implicit variables and repeats the research by generating auxiliary hypotheses. Nevertheless, the sociologist does not abandon the theory by admitting that it was refuted, but rather he/she loses the energy, motivation, interest, and, most importantly, the financial resources and funds to continue the research.

There is another paradox of the replication model that comes about with the Popperian falsification. Reaching the same results with the repetition of the original study contradicts the understanding of science that proceeds with falsification. According to Popper, replication occurs only in the form of falsification of the preceding theory (Popper, 1963, p.36). On the other hand, the failure to replicate a study indicates that there might be a problem with the original result or that there is an error in the replication process (Peterson et al., 2017, p. 149). Therefore, to sum up, it is not possible to construct sociological knowledge that is cumulative and repetitive with the Popperian falsification model. Reed also claimed that the social world is a world of opposition and that no empirical evidence can wholly represent the theory, ipso facto, the falsification model is not a realistic goal for sociology (Reed, 2008, p. 120).

Replication Studies: Danger of Nonrecognition

It stands as a clear fact that it is rarely possible for a sociologist to find funding for replicating a previously done study. Funding institutions and organizations are generally interesting in providing funding for new and unexamined topics (Lucas et al., 2013, p. 220). Therefore, there is neither financial credibility nor a guarantee for a social scientist to re-establish old studies in order to verify or falsify them. "Even if sociologists are inclined to replicate studies, they believe that referees and editors are unwilling to publish reports of the replications, especially if they confirm previous results" (Gaston & Zelditch, 1979, p. 791). Secondly, the repetition of existing theories is not seen as an interesting subject matter. Repeating an already existing data

set with new observational materials is not seen as an enjoyable, innovative, or interesting topic by social scientists (Lucas et al., 2013, p. 222). The views of scientists (sociologists and physicists) interviewed by Collins (1975) about replication are remarkable:

P-1: "I would feel kind of ridiculous building an exact copy because people would say, it is a copy, no ideas in it" (Collins, 1975, p. 211).

P-2: "We're like anyone else, we like to do things first or better or by ourselves. It is more satisfying. It is the least creative and the least interesting thing to do is just to build a copy of somebody's work" (Collins, 1975, p. 211).

According to Lucas et al. this is another reason why repetition studies are almost never performed in sociology (Lucas et al., 2013, p. 222). "Many sociologists believe that replication shows a lack of innovation and perhaps even a lack of competence" (Gaston &Zelditch, 1979, p. 791). In addition, as Eden (2002) and Collins (1999) emphasized, especially in accordance with the postmodern philosophy of science, the fact that theories belong to unique social contexts keeps sociologists away from reproducing already established research (as cited in Lucas et al., 2013, p. 222). Repetition of theories that were designed for different research programs, under specific social conditions, and time periods is described as easy and poor-quality research that cannot find a fan base among scientific communities. Following the same guidelines, repetition studies that test the same propositions present the danger of nonrecognition (Lucas et al., 2013, p. 222). Moreover, Mitchell (2014) also emphasized the complaints of researchers regarding replication efforts and how they are being treated, and argued that these are people (those who perform replications) that have thrived in a profession that alternates between quiet rejection and blistering criticism (see "On the emptiness of failed replication", 2014).

Latent Postulates

Apart from the reasons already given, some important conclusions can also be obtained through considering the philosophical presuppositions of the replication principle. The repetition of a sociological study actually means that the researcher embraces many pre-assumptions that s/he is never aware of. John Law's "Seeing Like a Survey" article (2009) is enlightening in this respect. Law claimed that social researchers choose a world at the same time they choose a method for a study, starting by accepting many taken-for-granted elements as they approach the information, and instead of describing the reality, they, in fact, construct a reality through the method chosen (Law, 2009). Therefore, sociologists have to see that a study whose aim is replication is based on many preliminary assumptions.

First of all, the principle of replicability is based on the tacit arguments of realism and naturalism. Many presuppositions are embedded within replication studies, such as: that there is a reality outside the human mind, but the human mind can penetrate this reality with certain means; the researcher is passive in front of the object that is being investigated; the theoretical constructs constituted by the human mind identically coincide with empirical observations, etc. Bourdieu also emphasized that survey and opinion polls were misleading and biased, postulating many premises prior to research: that all people had certain ideas, that these ideas could be revealed through questionnaires, that a few people selected by random sampling can represent the society as a whole, that each participant attributes the same values to answer choices, etc. (Lubis, 2017, p. 76). In addition, Wang et al.'s (2014) work reveals a significant measurement error that unconsciously emerges during surveys. They stated that a system called

"order effects" is observed in the surveyed participants that prevented the possibility of social scientific replication of studies (Wang et al., 2014, p. 9432). During the questionnaire, participants are asked to retrieve the memory attached to that question and relive the event for a short time. But, when another question is asked over a remembered memory, the participants build the second question on the basis of the prior memory they remember (Wang et al., 2014, p. 9432). In other words, the memory identified with the first question precedes and forms the second. According to Wang et al. this is a cognitive bias that invalidates replication in social research.

The view which places the individual in a passive state in the face of the object studied creates certain problems. From a natural scientific point of view, the fact that molecules or atoms do not contain values on their own, but those social scientific objects gain value only when the researcher approaches the object creates problems for the principle of replicability. In other words, social objects are normative and they are objects of value and meaning (Peels, 2019, p. 6). On the other hand, due to mainstream positivism, the exact harmony of observations and theoretical formations in natural sciences is pre-accepted in social sciences. For example, in natural sciences repetition of the movements of atoms, electrons, or protons conform to the theoretical construct and the same results are obtained consistently regardless of how many times it is repeated. However, it is not possible to see the exact harmony of observation and theory in social sciences.

The variety of researchers' intentions for investigation does not make it possible for a sociological study to be replicated. Replication by a social researcher who has started with a certain sociological imagination is not valid, because this involves many implicit processes that the researcher has constructed in his/her mind prior to taking action. It is troublesome to transfer the information embedded in this mind to another laboratory environment. Daniel Kahneman (2012), Nobel Prize winner in the field of psychology, emphasized that in order for a piece of social research to be repeated, one of the original people who conducted the research must be present and replication should be done by the description of all the methodical details. However, to replicate sociological research, it is necessary to learn the primary researcher's imagination of society, his intentions for research, his pre-research presuppositions, and countless other things which reflect a fruitless and inefficient occupation. Besides that, Travis (1981) argued that original social scientific studies are not well equipped to provide the basis for repetition. He argued that original studies do not provide any information about the conditions under which replication can occur (Travis, 1981, p. 15).

A Positivist Illusion: Researcher as a Static and Passive Individual

Another problem for sociology created by the principle of replicability is the underestimation of the individual. Positivist methodology places the individual (who can perform conscious actions in different conditions) in a passive position in the face of research. For example, when it comes to repeating research that was done 10 years ago, the positivist replication principle assumes that the individuals performing the research are identical and places both the research of the past and that of the present in the same intellectual, cognitive, and social position. It is paradoxical for sociology to equate with each other the spirit of time (Hegel), the common orientation of the scientific community (Merton), the paradigm to which they belong (Kuhn), existing ideological assumptions (Foucault), and the emotions and the pre-thoughts of the researcher (Bourdieu). Collins (1975, p. 206) also stated that for the replication of sociological studies, an exact copy of the original could not be done, and argued that the suggestion that two

copies are the "same" presupposes a cultural limitation on the variables used for different measurements in each research.

This critique, especially expressed by those who were influenced by the German Historian School and those who tend to see sociology in human sciences, claimed that the object of sociology was unique, one-off, and non-repeatable.[1] Besides that, the results of the replication studies carried out by researchers belonging to different schools of thought vary greatly. For example, studies repeated by researchers from the analytic and continental traditions differ. "It is likely that a replication of any study by members of the one group would lead to substantially different results if carried out by members of the other group" (Peels, 2019, p. 9). In addition, it is argued that even if a researcher tries to repeat his/her own research after a certain time, s/he cannot achieve the same results. Because human beings are in constant evolution, they cannot even pursue their own research with 100% accuracy due to both human incompetency and the emergence of new materials. For example, when a sociologist who has researched the French Revolution tries to repeat the research, s/he will reach new conclusions rather than repeating (verifying or refuting) his/her own results, since thousands of fresh writings, critiques, views, poems, plays, memoirs, paintings, etc. involving the French Revolution will interfere in the interpretation.

In relation to the above-mentioned actor issue, the *Ontology Problem,* the fact that the natural and social world differ ontologically has been expressed by many thinkers, and therefore it is emphasized that the principle of replicability cannot be naturally valid from a sociological perspective. It is known that the concept of law is very important for positivism based on empiricist preliminary foundations. The task of positivist social sciences is the discovery of laws that already exist in nature (Riley, 2007, p. 120). In other words, there are laws a priori in nature, independent of the human mind, and the task of sociology is the discovery of these laws (Riley, 2007, p. 120). This view, which expresses a realist attitude, aims to discover universal laws, and assumes that space and time are homogenous (Frazer, 1995, p. 272). Yet, the idea that laws exist ipso facto has been criticized (see Cartwright, 2007, p. 78). The homogeneity of time and space in nature cannot be approved by social ontology.

This criticism, which can be based on the hermeneutic school that started with Dilthey, claims that the social world has a heterogeneous structure and it rejects the idea of social law regardless of time and space. This view, which considers actors as interpreting creatures, defines the social world as the entity which attaches meaning to actions, objects, events, and phenomena (Frazer, 1995, p. 272). Therefore, every social scientific research is a process in which the researcher himself participates in the research process and constructs the social world through interpretation and language. Similarly, phenomenologists reject the idea of a reality independent of the human mind (see also Husserl 1970; Schutz 1967; Gadamer 2008). Starting with the term subjective consciousness, phenomenologists take the meanings attributed to the social world as a starting point for their research. Thus, the social world is built on the meanings attributed to objects by countless subjective consciences. The knowledge of the research object and subject is accumulated by the researcher covering intentions that are constructed for specific situations, and these sessions, based on interpretation and analysis, manifest themselves in day-to-day conversations (Friedhoff et al., 2013, p. 2). This shows the instability and fragility

[1] In my opinion, sociology cannot be considered as a purely solipsist endeavor, so it must be located between the natural sciences and humanities. It is a diverse discipline as it encompasses elements from both natural sciences and humanities.

of meanings which make it is impossible for another individual to repeat an action with the same consciousness. In other words, it is not possible to repeat a study of the social world constructed through meanings and interpretations ascribed by numerous actors. Similarly, ethnomethodologist Garfinkel demonstrated the never-ending nature of actors' attribution of meaningfulness, and the unnatural feasibility of replication (Garfinkel, 1984).

In addition to the theoretical constraints of replication for positivist social sciences, there are deliberate or involuntary errors and manipulations made by researchers which turn replication into an unattainable ideal. These are discussed below.

P-hacking, Cherry-Picking and HARKing: The positivist social sciences, which put the researcher in a value-free and passive state before the object under investigation, also ignore the potentiality of deliberate manipulation by the researcher. The state of hypotheses in social research and their relationship towards replication have been discussed extensively (see Simonsohn et al., 2014; Kerr 1998; Peterson et al., 2016). The ease with which statistical information can be manipulated makes it doubtful whether hypotheses are actually constructed before or after research is undertaken. The claims of scientific skeptics contain strong criticism in this respect. The first claim is that researchers follow a different course of analysis in the direction of their preferred hypotheses. According to this claim, the researcher is able to handle the data in the desired direction by eliminating distorting inputs in order to verify the hypotheses set forward (Schmidt, 2009, p. 6). This situation generates many obscurities about whether both hypothesis and analysis are biased toward favored results. This bias, called "P-hacking" or "Cherry Picking" claims that researcher use the data when only s/he is convinced that it has reached a certain level. In other words, by cherry picking, a researcher publishes the positive results that s/he deems important only when it reaches the sufficient statistical threshold (Murphy and Aguinis, 2019, p. 3). The second argument is the question of whether the hypothesis is really constituted a priori or not (Schmidt, 2009, p. 6). This bias is called "HARKing: Hypothesizing After Results Are Known" (Kerr, 1998, p. 197). Accordingly, it is not possible to determine when the researcher actually formed the hypothesis. The hypothesis has the potential to be constructed as desired based on the results presented when the research is complete. This is an issue that draws attention to the importance of the individual factor in the hypothesis (the most important building block of research) and it is a subject that also emphasizes fraud in the research (Makel et al., 2014, p. 306). These claims, which reveal certain difficulties within the original studies, are also valid in the replication process. The degree to which replication remains faithful to the original study remains controversial. If replication is addressed with the intention of verifying the original study, it is considered to be largely successful, i.e. replication is achieved. However, results of an attempted replication may end up different if it turns out that the original study was not possible to replicate in the first place.

Poor Study Design: Prior to beginning the research process, the researcher makes specific decisions mostly based on personal predispositions. These are decisions that directly affect subsequent replication. Although these decisions do not affect replication much for the natural sciences, this is not the case for the social sciences. One of the most important of these decisions is the preferences for the study design (Asendorpf et al., 2013, p. 110). These decisions – although differing according to the type of the study– include research question, hypotheses, variables, the avoidance of bias, data collection methods, classification, and analysis. Total repetition of these decisions is not possible. The weak design, which arises from the researcher's incompetence, also affects replication. Poorly designed questions, materials and methods, poor

randomization, or misrepresentation of the selected group directly affect future replicability and make it a hard ideal to reach (Asendorpf et al., 2013, p. 110).

Structural Limits: Advances in computing, statistics, and computer systems have greatly increased the potential size of quantitative social research and continue to do so. This technological innovation provides the researcher with a lot of maneuvering space and capability, causing certain difficulties in replication of the research. Researchers are expected to limit the scope of their published academic articles with particular regard to their size, length, and stylistic characteristics (Freese, 2007, p. 154). In other words, the researcher is expected to paraphrase all his work in a way, to remove the models, variables, non-subject observations, and experiments that he has chosen. All these unwritten and intellectual choices involving the author's analytical decisions are not included in the articles (Freese, 2007, p. 154). This is a constriction that prevents subsequent studies and replication. Replication of quantitative studies is theoretically the most important criterion of reliability, a reflection of the principle of transparency, and a manifestation of the principles of precision and clarity (Freese, 2007, p. 154). However, research that has been prepared in a specific scheme does not carry any such information that would allow replication. Even if the general theoretical orientation and the research universe are explained in the methodology sections of the research, it does not include the way in which the conclusion is drawn from the observation site and the author's unwritten analytical decisions. This makes replication especially impossible for quantitative sociological studies.

Transparency: Ethical issues complicate the replication of sociological studies. Information collected from the field must be kept confidential for ethical reasons. Particularly in randomly sampled works there is no way of contacting the participants or collectors of the data gain because personal information is not recorded. Often, participants do not want their answers to be disseminated to other researchers. “Especially in sociology, perhaps, researchers often are not able to make the data on which their analyses are based publicly available, either because they do not have the right to distribute the data or because of confidentiality agreements. Even when researchers can make data publicly available, they may not wish to do so because they may not want others to use their data for further analyses, at least as long as they are planning any subsequent publications of their own from those data” (Freese, 2007, p. 160). This contradicts the transparency principle of replication.

According to a study by Young and Horvath (2015), half of the authors who were contacted for the replication of 53 quantitative sociological studies refused to provide the data collected from the field. A part of the sociologists (11%) stated that they lost the data due to computer and storage problems, that some of them (11%) could not give the data because they were too busy, and some (4%) stated that there was no specific data of replication and that this could only be discovered in the article they wrote (Young & Horvath, 2015). Again, with a follow up study by Vanpaemel et al. (2015), it was found that 246 out of 394 contacted authors of papers in American Psychological Association journals did not share their data upon request. As it was mentioned earlier with regard to transparency in the code of ethics of the American Sociological Association and the American Economic Association, authors of journals are supposed to deposit data in independent repositories maintained by archiving professionals, rather than leaving long-term data availability contingent on authors maintaining their personal websites (Peterson et al., 2017, p. 153), and researchers and sociologists “should” share their data for subsequent replication. However, there are no legal regulations and sanctions regarding what will happen if they do not share. With the modal verb “should”, it is only recommended to

researchers, and entirely left to the author's personal preference, individual graciousness, and charity.

Collins attributes a significant part of the reasons why replication studies are not valid to selfish preferences (Collins, 1975, p. 210). Accordingly, a majority of scientists do not accept the verification or falsification of their work that that is the result of long-term and labor-intensive work, leading it to be a matter of pride (Collins, 1975, p. 210). Collins claims that this is where scientific selfishness comes into play. Due to the fact that the scientific world is a very competitive environment, the vast majority of scientists are trying to make revolutionary discoveries and are thus afraid to give data to those outside their designated environment which are labelled as "outgroups" (Collins, 1975, p. 210). This is another argument that shows why replication is not valid in the social sciences.

Ethics: In social scientific research, one of the most important factors which prevent replication is ethics. This may be the periodical ethical rules set by academic circles, or it may be the moral norms that all humanity has accepted for the sake of alliance in that time period. As can be seen in the structural changes in scientific ethics, there are different ethical understandings of different time periods. A study that was considered normal and moral in the past may be considered unethical for today's standards. For example, anthropological research with formerly isolated communities is not considered ethical science today. In addition, in psychology, Harlow's (1965) iron motherhood experiment with monkeys and Watson's (1920) experiments on little Albert have never been replicated for ethical reasons. At the time of these experiments, it was not considered unethical to conduct experiments on animals and humans, but today, replication of these studies constitutes a violation of human and animal rights.

Unintentional Errors: Errors are events that may occur at any time during the entire investigation period. It is not possible to say that social research which is the result of human labor is 100% accurate. Mathematical inaccuracies, especially in quantitative studies, can affect the outcome of the whole study (see also Reinhart & Rogoff, 2010) for the consequences of a small error in statistical data). Such errors prevent replication, and the error in the original study causes replication to fail continuously and even constrains it from being performed. Therefore, the discrepancy between the original study and replication cannot be established. Although the detection of errors in quantitative studies can be made more easily with computational systems, such a criterion of accuracy does not apply to a subject-based science such as qualitative sociology.

Fraud: Scientific fraud has become particularly important in the context of the post-2010 replication crisis. There is no systematic study on academic dishonesty and fraud, but Brainard (2018) reports that four out of every 10,000 academic studies are faked. In addition, according to Fanelli (2009), 2% of scientists admitted to falsifying studies at least once and 14% admitted to personally knowing someone who did. Some researchers alter their data because they do not get answers to their research question or the results they expect. They aim to deceive academic committees or journal editors through manipulation that can be easily done in all social scientific studies. Fictitious participants can be produced for qualitative research and statistics are changed for quantitative research. It is an unethical and inglorious intervention to research which is done for the sake of reputation. The Potti incident is the greatest example of fraud in

science.[2] Therefore, such personal interventions are among the reasons preventing replication. In terms of natural sciences, this type of fraud can be detected more easily and the replication occurs in the study performed. However, there is no such criterion in social scientific terms. The increasing importance of fraud in science in the context of the post-replication crisis, and the enthusiastic attention of the media and political circles regarding scientific fraud are mentioned in the *Discussion* chapter of this study.

Therefore, to summarize, it is clear that the individual is not a passive actor in the face of research and can even control and manipulate each stage of such research when necessary. This is a situation that greatly shaken the ideal of objectivity and replication as the fundamental assertions of positivist sociology.

Replication and Controllability

For natural sciences, controllability is a concept that is directly related to replication, and it is a principle which determines whether a piece of research has the potential for replication. More replication becomes possible if a study is able to identify the uncertain variables which affect the system and control them with appropriate methods (Milkowski et al., 2018, p. 163). Identifying those variables that seem to be indeterminate, implicitly affecting the phenomenon being investigated, empowers the researcher in subsequent studies and replication becomes easier (Milkowski et al., 2018, p. 167). But this principle is problematic for the social sciences. This is the case especially for sociology which does not rely on direct observation such as physics and chemistry, reaches conclusions with the help of indirect measurement and statistics, and explores complex systems in which it is impossible to determine all of the variables which affect a phenomenon. (There are also discussions going on in the natural sciences arguing that it is not possible to comprehend all variables). However, as the complexity of the investigated object increases, controllability decreases.

As the research objects of sociology, society and human nature contain various interactions of numerous components which are impossible to be predicted fully, preventing subsequent replication from taking place. “If the variables within a system can be known, characterized, and controlled, research on such a system tends to produce more replicable results” (National Academies of Sciences, Engineering, and Medicine 2019, p. 73). For example, the stimuli and effects presented by an object of natural science inquiry can be largely predicted when the conditions are known. Environment-related variables (such as air pressure, friction, temperature, elevation, etc.) which can be measured allow for replication to be successful. On the other hand, unlike in natural sciences, the social sciences that deal with subjective intentions

[2] The most influential case of scientific fraud involves Anil Potti of Duke University. It has been revealed that his entire body of research (11 articles in total) was conducted using a fake data system and was funded by his scholarship totaling $780,000 (Kaiser, 2015). Other incidents of fraud include the case of Cyril Burt, who made his mark as a pioneer of applied psychology. He deliberately altered statistical data for at least 30 years and also modified the 10 intelligence coefficients in his extensive research on intelligence and atavism. His manipulations pushed science in this field in the wrong direction until 1979 (“The Cyril Burt Affair”, 2018). Smith Woodword and Charles Dawson tried to simulate a thousand-year-old fossil by treating a human skull with potassium dichromatic in a Piltdown pit (“Piltdown Man”, 2019). The statistics announced by the US Food and Drug Administration (FDA) indicated that fraud in research has been recorded in 11% of controls during the last 10 years (Seife, 2015, p. 569). The researcher Stephen Brevning had the hypothesis that neuroleptic drugs do more harm than good (going so far as to suggest that they not be recommended at all) and produced results supporting his theory with a long chain of research (Arslantürk, 1989). A larger study by the American National Institute of Mental Health (NIMH) requested additional information on the effect of drugs on IQs, leading to Brevning being formally accused on charges of fraud and giving false information to the government in April 1988.

partially based on psychological factors are not able to be controlled in the same way. For example, in sociology, an individual's response to a stimulus is influenced by many different variables. The most prominent ones are social context, biological and psychological traits, the researcher's verbal or nonverbal cues, etc. It is very difficult or even impossible to fully control these variables. Therefore, the replication potential of a study is determined by the extent to which these variables are detected and controlled. Sciences such as sociology where the control of variables is difficult or impossible do not conform to the principles of positivist replicability and controllability.

Postmodern Replication

Especially when science studies and developments in the philosophy of science after World War II are taken into consideration, it is seen that the perception of science has undergone a radical change. This is another indication that replication is not possible from a social scientific point of view. With the influence of both the post-modern and post-positivist paradigms, the tendency to view science as a single and unitary activity that explains everything has been largely abandoned. According to this view, science is not indivisible and unified, but rather diverse and disjointed. In parallel, the principles of universality and objectivity have also undergone major changes. According to this view, science is not seen as a common effort, but as a structure characterized by path-dependent scientific communities yielding their own methods, theories, and practices (Seyedsayamdost, 2015, p. 2). In other words, rather than an absolute orientation, it presents a structure shaped according to the epistemic culture to which it is attached. Therefore, replication is not a universalized and idealized scientific method, but rather a result of cultural developments shaped by the internal and external dynamics of science (Knorr-Cetina, 1991, p. 107).

The rules of replication in any epistemic culture can be determined by professional scientific organizations, journals, and funding agencies. In this epistemic culture, how to address research data, and how replication should take place can be given, but often these guidelines are implicit (Peterson et al., 2017, p. 151). These rules, also known as replication conventions, are found as non-codified knowledge embedded in the research and in the mind of the original researcher (Peterson et al., 2017, p. 151). Therefore, it is not possible to identify a common replication criterion for researchers who belong to different replication conventions: i.e. for researchers belonging to distinct epistemic cultures. Based on this view, each replication study will attain a different result due to the epistemic culture with which it is associated and its own historical, social, political, and scientific, predispositions. Kuhn's theory of incommensurability coincides with the example given in this sense. The route that social scientists should follow in the replication process is a return of positivism, namely in the sense that natural sciences are to be imitated. However, equalizing what natural scientists and social scientists do is quite problematic. Because, as mentioned above, by embodying different replication rules and conventions, they are incommensurable and replication can only be enlightened by the normative questions of social scientists.

Replication as an Ideal: The Quantitative-Qualitative Debate

The notion that natural sciences and sociology are based on ontologically different preconceptions includes significant differences in the distinction between qualitative and quantitative approaches. For sociology, Gieryn (1983) argued that all the replication discussions are a peripheral work and the quantitative-qualitative discussions always end in the separation of science from pseudo-science. From a quantitative sociological perspective, qualitative studies that do not accept replication as a technical criterion are not considered scientific

(Gieryn, 1983, p. 784). Whereas qualitative studies consider replication as reality shaped in a social field, and prefer the term "intersubjective accountability" instead of replication (Gieryn, 1983, p. 784). Therefore, the discussions of sociological replication are not discussions of positivist methodology, but rather a meta-philosophy which addresses the demarcation between different approaches.

Although quantitative studies see replication as the sign of rigidity and as a safety mechanism, replicating a quantitative work generates various social and epistemic problems. "By looking at the quantitative social sciences, it becomes evident that not just technical but also social aspects are relevant parts of arguments" (Reinhart, 2016, p. 419). The role of different actors in problematizing the subject, determining the research universe, collecting data, coding, and subsequent processes make replication a difficult ideal to reach in quantitative studies. For example, the American Journal of Political Science announced that all of its studies involve third parties in the process of data collection (Brader & Tucker, 2012, p. 412). No research goes into the field conducting individual surveys of large masses of people. Instead, the researcher employs survey/poll companies. This means that data is collected by very different people. In the process that follows, the author starts the coding process, again with the help of a statistical expert and assistants. A researcher cannot be reasonably expected to construct a questionnaire including hundreds of thousands of questions on his own, as well as, collect the data and analyze it.

Friedhoff et al. (2013) argued that during the analysis phase, many mistakes occur and some researchers who are not familiar with statistical programs conduct research with office programs whose purpose is not to conduct social research. Therefore, the researcher's ability as well as other mystery factors affect whether the data has been analyzed accurately. In their analysis, Smaldino and McElreath (2016) brought important results for the discussion of the possibility social science studies which involve replication and emphasized the mistakes made during the research process. Accordingly, the possibility of replicating research is directly related to the errors made during the research process. For example, Smaldino & McElreath (2016, p. 3) stated that in order to comply with the productivity expectations of the academy and gain early reputation as soon as possible, researchers do not attach enough importance to the research and they frequently exaggerate and generalize their results. The hastiness in the desire to publish the article as soon as possible brings about many mistakes which eliminates the possibility of replication and creates bad, poor quality scientific studies (Smaldino & McElreath, 2016, p. 3). Jim Grange, a psychologist from Keele University, stated that the "publish or perish" principle in academia canalizes researchers to prioritize "getting it published" over "getting it right" (Grange, 2017). As mentioned above, performing the coding phase by different actors also reduces the reliability of the process and paves the way for error or manipulation. In this case, replication becomes not a study of accuracy, but a repetition of the fallacious original study. For example, McPherson et al. (2006) exposed that 41 survey-based studies in the United States had incorrectly coded. After the coding phase, the editing process begins by editors for publishing or by those who the research personally wishes to revise their work, these people being thanked in the acknowledgement section of the work. Therefore, quantitative studies include not only the work of a researcher, but also a structure which involves many actors that makes replication unachievable.

Besides quantitative studies, replicability has never been ideal for qualitative studies. In fact, replicability for qualitative-oriented sociology has been rejected from the very beginning. For example, according to Simon and Goes (2012), qualitative research has no expectation of

replicability in any way, and instead of replication the terms "quality", "rigor" and "trustworthiness" formalize the structure of qualitative works. In other words, "qualitative research accepts the principle of reproducibility but uses a different set of parameters to determine and evaluate it, namely trustworthiness, confirmability, credibility, and transferability" (Kroeze, 2012, p. 5). On the other hand, Taylor et al. (2005) stated that it is not possible to set a criterion for qualitative research to produce verifiable and accurate information. Jeffrey Isaac, the editor of American Political Science Review claimed that the principle of replication does not apply to qualitative studies in political science (Isaac, 2015, p. 269). He stated that the principle of replication forms a neo-positivist dominance over the social sciences, and argued that positivist political science gives rise to a false perception that perspectives are fixed, static, and objective, rather than seeing a never-ending area of contestation (Isaac, 2015, p. 275). For qualitative studies, replicability has been rarely pronounced and even absent. When observing and questioning again, the participants appear as completely different actors meaning it is not possible for a researcher to achieve the same results by replicating a qualitative study because repetition actually takes place as a matter of interpretation. For Bloor (1997), in qualitative research replicability cannot be repeated as empirical data, but it can be converted into a valid practice by demonstrating a correspondence between the analyst's findings and the understanding of members of the collectivity being analyzed (as cited in Reinhart, 2016, p. 408).

According to Abrahamson and Dohan (2015), the methodological discussions of replication in qualitative sociology vary sharply because qualitative researchers do not share any common epistemological assumptions with their quantitative colleagues. Therefore, replication is not a criterion of accuracy or validity for qualitative studies. There are many reasons for this. First of all, qualitative sociology emerged as a field of interpretation. Sociologically, it is a system that is shaped by the verstehen model, not by what is given, but by understanding the motivations and meanings underlying the actions. In this sense, replication as a repetition or verification of meanings would be an incorrect language. According to Biernacki (2012), as the replication of qualitative studies is not possible, the coding process for making qualitative studies more scientific is also nothing more than concealing the interpretation phase. The second issue is whether the facts actually exist objectively. The system known as fact checking is a requirement for replication to occur and it provides a control mechanism for the facts in the previously conducted research to be determined and tested (Uscinski & Butler, 2013, p. 172). But this also has certain problems.

The most well-known study showing that qualitative research does not allow for replication is Freeman's (1983) replication of Margaret Mead's (1973) anthropological study in Samoa Freeman tried to repeat Mead's fieldwork-based research and sought to achieve the same results using Mead's facts and resources (Peterson et al., 2017, p. 159). However, replication was not successful and Freeman had very different results. Freeman then criticized Mead on the issue of objectively available facts and accused Mead of ignoring the field of interpretation (Peterson et al., 2017, p. 159). He argued that the operation of the fact checking system does not apply to qualitative studies. One of the most important features of fieldwork is the continuation of the overall process of the work in a very isolated way. Researchers often use pseudonyms to prevent unveiling the individuals, groups, communities, or organizations being investigated. The anonymization process is the most important condition for fieldworkers. In addition, it is debatable whether researchers can continue qualitative research with the same interpretation method even if they use the same materials, settings, and individuals (Sherif, 2001, p. 437). For example, in archival research, the claim that the interpretation of documents is idiosyncratic

and thus a different interpretation process for all those who utilize the same documents is controversial. This is an event that prevents the fact-checking mechanism from working. According to Hammersley (1997), the field notes produced by the researcher during the qualitative study are texts with different interpretations and are written around a certain schema in the author's mind. Furthermore, in qualitative studies, the primary claim is that the understanding of a material or phenomenon does not in any case arise purely from that material or phenomenon. Certainly, an actor and commentary come into play. Collins (1998) describes the interview as a reality built by the researcher based on the responses of the subjects and the experiences the researcher has gained while working in the field.

Replication for qualitative studies is not a criterion of reliability due to subjectivity and the inevitable context-dependent structure. Researchers working in more idiosyncratic environments agree that replication is not a criterion for data security and validity. Therefore, for qualitative researchers, the processes of the production, distribution, and interpretation of data are more important than replication (Leonelli, 2018, p. 11). In other words, the accountability of the methods they use and the long-term preservation of the materials and techniques are more prioritized. The fact that different researchers have different worldviews and ways of interpretation is accepted as the starting point (Leonelli, 2018, p. 11). The process of evaluating and approving the study begins here. Ethnographic studies, for example, have developed methodological strategies in this direction since they carry the idea that research is likely to vary according to time, place, person, and intention. The most important of these is reflexivity. This is when researchers become aware of their existence as much as possible during the research process and determine to what extent their circumstances can affect the research (Leonelli, 2018, p. 11). This allows the person to see their biases on their own research by becoming aware of themselves. Both subsequent researchers and readers are then able to determine the extent to which the author's attention, emotional state, and many other factors influenced the research.

In addition to all these general criticisms, there are also those who claim there is a possibility of repeating qualitative studies. However, this segment forms a minority and, as a self-critique, they state that no satisfactory replication has ever been performed. For example, Aguinis and Solarino (2019, p. 1312) have conducted a comprehensive study to determine how many qualitative studies are able to be replicated, identifying 12 criteria that should be included in the original study to enable replication, subsequently selecting 52 qualitative studies to test. However, none of them have been able to achieve replication in any way whether it be empirical, conceptual, or otherwise. Again, Friedhoff et al. (2013) emphasized the possibility of replicating qualitative studies while highlighting important obstacles. According to him, the documentation of the data required for replication is difficult to produce in qualitative studies (Friedhoff et al., 2013, p. 3).

The archiving of the collected data and making it available for further studies is within the framework determined by the researcher, and this is entirely a matter of choice (Friedhoff et al., 2013, p. 4). The researcher performs a selection of the collected data and the pages of transcription, eliminating other data by using only as much data as is required for the research question and hypothesis. It is a matter of the researcher’s personal preference which information is necessary and which should be discarded. This documentation problem can only be solved if researcher has a very broad vision and calculates possible secondary studies from the data collected. However, as Friedhoff et al. claims, no researcher has the ability to make such predictions (Friedhoff et al., 2013, p. 4). Furthermore, it is also not possible to store all this data.

The process before the data is collected also plays an important role on the data that becomes available. For example, the personal preferences of the researcher (what kind of interview questions are prepared, what materials are used, the personal notes kept, the universe of research, the time, the people chosen, the audiovisual recordings, the extra collected documents, etc.) are among the factors affecting the organization of the data and the research as a whole (Friedhoff et al., 2013, p. 5). In addition, Freese (2007) also argued that the replication of quantitative sociological studies can be done, but unsuccessful attempts so far have been caused by the authors' own faults. According to Freese, the author of the original work should blame him/herself, because he/she has failed to provide all the detailed information for the research to be replicated (Freese, 2007, p. 168). However, for the reasons mentioned above, it is not possible for the researcher to write down the whole research process, including his personal intentions and decisions.

In conclusion, the possibility of replicating both quantitative and qualitative studies depend primarily on epistemological notions and suitable technology. "While quantitative social research tends to follow science-oriented paradigms, qualitative social research tends to follow [a] humanities paradigm. These different choices bias not only the research process, but also data documentation methods" (Friedhoff et al., 2013, p. 24). As a result, the ontological and epistemological structure of quantitative and qualitative studies does not allow for replication, and this is especially the case for qualitative works. The replication of ethnography, fieldwork, archive studies, etc. has never been realized.

After the emergence of a clear replication crisis in the social sciences, ideas were proposed from different academic circles as a solution. For example, Danny Kingsley from the University of Cambridge claimed that the replication crisis could only be overcome by a genuine Open Research idea. He stated that not only the findings of the research but the whole process should be presented in detail alongside the research ("The science 'reproducibility crisis' – and what can be done about it", 2017). When an application called Registered Report was launched in psychology in 2013, Kingsley stated that researchers are now expected to explain how they conduct their research. With this, it is hoped that editors will be more confident about the data and that the replication of research will be successful. On the other hand, Jim Grange from Keele University stated that many journals in the UK are innovating on the replication crisis and consequently introducing more stringent requirements (Grange, 2015). Even some journals require the methods, experimental protocols, and analytical strategies planned by the researcher long before the actual research begins. Grange, who thinks that the crisis can be overcome with these developments, claimed that the crisis still continues today. Brian Nosek, executive director of the Center for Open Science and professor at the University of Virginia, emphasized that science has undergone a major reform process, and that new policies and practices by editors, journals, funding organizations, and academic communities are established to generate a research culture of replication based on the principles of openness and certainty ("Testing the reproducibility of social science research", 2019). In contrast, Ottoline Leyser from the University of Cambridge stated that the replication crisis is a matter of purely research-related and fraud-related issues (Watts, 2017). Speaking on the UK in particular, Leyser claimed that the reputational awards distributed push the researchers to illegitimate ways and towards manipulating their data. He claimed that the replication crisis would be overcome with the

abolition of such a reward system and the environment in the scientific community which pushes competition.[3]

CONCLUSION

In recent years, the productivity of interdisciplinary studies has been remarkable. Through joint studies conducted between branches of knowledge that examine objects with different methods and techniques, researchers make significant contributions to both their areas of expertise as well as new knowledge spaces. According to these critical studies, it is not appropriate to mention a unified method for social sciences in terms of both universality and replicability. Homogenization of different objects to the same essence and relying on a measure that leads to certainty by mathematical method limits the informational horizon from developing science, and thus, society. Throughout the thesis, my personal assertion was that the pursuit of universality and replicability as a base epistemic value for social research is null and void. The fact that replicability is defined as a criterion which separates science from non-science is misleading and is in a position to distort social sciences in general and sociology in particular.

The replication crisis that erupted in 2011 brought the principles of positivist replicability and universality back on the agenda and revealed that the criticisms were right to a certain extent. This crisis began as a result of the vast failure to repeat the majority of research in social psychology, later spreading to all social sciences, and now having become a question of scientific legitimacy. When the crisis is considered in the context of sociology, it is determined that replication poses many problems. Firstly, it can be seen that sociological knowledge cannot proceed with the post-positivist falsification model. On the other hand, replication of a sociological study creates problems regarding funding and recognition as it appears not to fulfill the demands of academic circles and journal editors to produce innovative Theoretically, it has been argued that replication cannot be valid in social sciences (and sociology in particular) and it has been found that each study is based on different postulates and pre-assumptions which are determined by historical, social, and political dispositions. Positivism, which claims that the researcher is passive in the face of research, has been rejected and it has been shown that researchers can manipulate their data intentionally or unintentionally. In addition, the possibility of replication has been considered problematic, especially due to ethical issues. When qualitative studies are examined, it is seen that replication is not ideal in terms of sociology and that rather inter-accountability and understanding are at the forefront of the research. On the other hand, with the replication crisis, an important handicap of positivist social sciences has been revealed. It has been found that positivism ignores the idea that research is carried out in very different fields, with very different materials, and very different objectives. This leads researchers to seek to gain maximum control over the research environment and the materials used, and it disregards the idiosyncratic dimensions of research, limiting the research to an activity aimed at completing only superficial science protocols. In

[3] Against all these suggestions, my personal assertion is that they are not adequate solutions for the replication crisis. First of all, for the reasons given above, a social scientific study does not allow for replication, even if all data is made available. For sociology where interpretation and the researcher are involved in the research process, the principle of openness of data is far from a cure. In addition, the suggestions given are related to the principle of transparency of science only in terms of sharing data and do not limit the researcher's intervention on the data shared. That is, even if the researcher is expected to share the whole research process, there is no guarantee that previously modified, manipulated, or false statistics will not be included. Therefore, the suggestions given do not seem sufficient to solve the replication crisis from a social scientific point of view.

short, researchers ignore the subjective conditions of their local situations, seek to conform to theoretical formalities, and bypass the interpretation process of the results they have reached and to extent to which their position affects results.

In conclusion, going back to the purpose of the paper, it is possible to state that the hypothesis is confirmed. Considering the evolution of positivism from the era of Comte (when positivist sociology systematically formed in 1850) to the non-positivist methodological synthesis of 1970, and the criticisms against positivist claims of replication and universality as well as the replication crisis that erupted after 2010, it is clearly observed that these principles which give legitimacy to social sciences are theoretically accepted, but pose major problems in practice and cannot be accepted as a valid scientific criteria. Accordingly, positivist replication is not a valid principle for social sciences, especially sociology. The post-colonial understanding of anti-universality which has become more evident has also been proven here because of the failure of replication and the notion that universal laws cannot be reached through reproducible knowledge has been strengthened.

Ethical Text

In this article, research and publication ethics rules are followed. The responsibility of any violation regarding the article belongs to the author(s).

REFERENCES

Abramson, C.M. & Dohan, D. (2015). Beyond text: using arrays to represent and analyze ethnographic data. Sociological Methodology. *45*(1), 272–319.

Aguinis, H. and Solarino, A. M. (2019). Transparency and replicability in qualitative research: The case of interviews with elite informants. *Strategic Management*, (40), 1291–1315. https://doi.org/10.1002/smj.3015

Amrhein, V., Trafimow, D. & Greenland, S. (2018). Inferential statistics as descriptive statistics: there is no replication crisis if we don't expect replication. *The American Statistician*. *73*, 262-270, https://doi.org/10.1080/00031305.2018.1543137

Arslantürk, A. H. (1989). Batı bilimi sorgulanıyor. bilim adamları sahtekarlık yaparlar mı?. Hayatın anlamı nedir? http://www.hayatinanlaminedir.com/bilim-adamlari-sahtekarlik-yaparlarmi/

Asendorpf, J. B., Conner, M., De Fruyt, F., De Houwer, J., Denissen, J. J., Fiedler, K., Perugini, M. Brent W. Roberts, B. W., Schmitt, M., Vanaken, M. A. G., Weber, H., & Wicherts, J. M. (2013). Recommendations for increasing replicability in psychology. *European Journal of Personality*, *27*(2), 108-119.

Baker, M. (2016), 1,500 scientists lift the lid on reproducibility. *Nature, 533***,** 452–454. https://doi.org/10.1038/533452a

Bayram, G. (February 14, 2016). *Açık bilim ve bilimsel tekrarlanabilirlik.* https://www.evrensel.net/yazi/75981/acik-bilim-ve-bilimsel-tekrarlanabilirlik

Berger, J., Eyre D. P. & Zelditch, M. (1989). Theoretical structures and the micro-macro problem. In *Sociological Theories in Progress: New Formulations*. (1-44). https://core.ac.uk/download/pdf/87261128.pdf

Biernacki, R. (2012). *reinventing evidence in social inquiry: decoding facts and variables*. Palgrave Macmillan

Brader, T., & Tucker, J. (2012). Following the party's lead: party cues, policy opinion, and the power of partisanship in three multiparty systems. *Comparative Politics*, *44*(4), 403-420.

Cartwright, N. (1997). Where do laws of nature come from?. *Dialectica*, *51*(1), 65-78

Challenges in irreproducible research. (October 18, 2018). *International Journal of Science*. 07.06.2019. https://www.nature.com/collections/prbfkwmwvz

Clark, A. M. (1998). The qualitative-quantitative debate: moving from positivism and confrontation to post-positivism and reconciliation. *Journal of Advanced Nursing*, *27*(6), 1242-1249.

Collins, H. M. (1975). The seven sexes: A study in the sociology of a phenomenon, or the replication of experiments in physics. Sociology, *9*(2), 205-224.

Collins, H. M. (1998). The meaning of data: open and closed evidential cultures in the search for gravitational waves. *American Journal of Sociology*, *104*(2), 293–338

Collins, R. (1999). Unrecognized cumulation. *The American Sociologist*. *30*, 41-61

Daniel Kahneman (2017). *"I placed too much faith in underpowered studies".* 22.06.2019. https://news.ycombinator.com/item?id=15228712

Eden, D. (2002). From the editors: replication, meta-analysis, scientific progress, and AMJ's publication policy. *Academy of Management Journal*, *45*, 841-84

Fanelli, D. (2009). "How many scientists fabricate and falsify research? A systematic review and meta-analysis of survey data". *PLOS One*. *4*(5), 1-11. https://doi.org/10.1371/journal.pone.0005738.

Freeman, D. (1983). *Margaret Mead and Samoa: The making and unmaking of an anthropological myth*. Canberra, ACT: Australian National University Press.

Freese, J. (2007). Replication standards for quantitative social science. *Sociological Methods & Research*, *36*(2), 153–172. https://doi.org/10.1177/0049124107306659

Freese, J. (2014, July 8), *Why so much psychology?*. Scatterplot. https://scatter.wordpress.com/2014/07/08/why-so-much-psychology/

Friedhoff, S., Meier zu Verl, C., Pietsch, C., Meyer, C., Vompras, J., & Liebig, S. (2013). *Replicability and comprehensibility of social research and its technical implementation*. [Working Paper, No. 219], Rat für Sozialund Wirtschaftsdaten (RatSWD), Berlin.

Garfinkel, H. (1984). *Studies in Ethnomethodology*. Cambridge: Polity Press

Gaston, J., & Zelditch, M. (1979). The big three and the status of sociology. *Contemporary Sociology*, *8*(6), 789-793.

Gieryn, T. F. (1983). Boundary-work and the demarcation of science from non-science: Strains and interests in professional ideologies of scientists. *American Sociological Review*, 781-795.

Gouldner, A. (1968): The sociologist as partisan: sociology and the welfare state. *American Sociologist*, *3*(2), 103-116.

Grange, J. (2015, September 14). *My voluntary commitment to research transparency & open science*. https://jimgrange.wordpress.com/tag/reproducibility/

Grange, J. (2017, March 16). *Reproducibility article in "the conversation".* https://jimgrange.wordpress.com/category/reproducibility

Hacking, I. (1983). *Representing and Intervening: Introductory Topics in the Philosophy of Natural Science*. Cambridge Univ. Press

Hagger, M. S. & Chatzisrantis, N. L. D. (2016). A multilab preregistered replication of the ego depletion effect. *Perspectives on Psychological Science*, *11*(4), 546-73

Hammersley, M. (1997). Qualitative data archiving: some reflections on its prospects and problems. *Sociology, 31*(1), 131–42

Harlow, H. F., Dodsworth, R. O., & Harlow, M. K. (1965). Total social isolation in monkeys. *Proceedings of the National Academy of Sciences of the United States of America*, *54*(1), 90.

Horton, R. (2015). "Offline: What is medicine's 5 sigma?". *The Lancet*. *385*(9976), 1380. https://doi.org/10.1016/S0140-6736(15)60696-1

Ioannidis, J. P. and Trikalinos, T. A. (2005). Early extreme contradictory estimates may appear in published research: The Proteus phenomenon in molecular genetics research and randomised trials. *Journal of Clinical Epidemiology*, *58*, 543–549.

Isaac, J. C. (2015). For a more public political science. *Perspectives on Politics*, *13*(2). 269-283. https://doi.org/10.1017/S1537592715000031

Kaiser, J. (2015, November 9). *Potti found guilty of research misconduct.* Retrieved: 05.07.2019. https://www.sciencemag.org/news/2015/11/potti-found-guilty-research-misconduct

Kerr, N. L. (1998). HARKing: hypothesizing after the results are known. *Personality and Social Psychology Review*, *2*(3), 196–217, https://doi.org/10.1207/s15327957pspr0203_4

Knorr-Cetina, K. D. (1991, August 9-12). Epistemic cultures: Forms of reason in science. *History of Political Economy*, *23*(1), 105–122. https://doi.org/10.1215/00182702-23-1-105

Kroeze, J. H. (2012). *Interpretivism in IS–a postmodernist (or postpositivist?) knowledge theory*. Proceedings of the Eighteenth Americas Conference on Information Systems, Seattle, Washington, USA.

Law, J. (2009). Seeing like a survey. *Cultural Sociology*, *3*(2), 223-246. https://doi.org/10.1177/135050849962004

Leonelli, S. (2018). *Re-thinking reproducibility as a criterion for research quality.* http://philsciarchive.pitt.edu/id/eprint/14352.

Lubis, F. O. (2017). Reviewing Bourdieu's critique of opinion polls and notion of reflexivity in the public of indonesia. *Jurnal Politikom Indonesiana*, *1*(2), 75-83.

Lucas, J. W., Morrell K. & Posard, M. (2013). Considerations on the "replication problem" in sociology. *The American Sociologist*. *44*, 217-232. http://dx.doi.org/10.1007/s12108-013-9176-7

Makel, M. C., & Plucker, J. A. (2014). Facts are more important than novelty: Replication in the education sciences. *Educational Researcher*, *43*(6), 304-316. https://doi.org/10.3102/0013189X14545513

Makel, M. C., Plucker, J. A., & Hegarty, B. (2012). Replications in psychology research: how often do they really occur?, *Perspectives on Psychological Science*, *7*(6), 537–542. https://doi.org/10.1177/1745691612460688

McPherson, M., Smith-Lovin, L. & Brashears, M. E. (2006). Social isolation in America: changes in core discussion networks over two decades. *American Sociological Review*. *71*(3), 353–75.

Mead, M., Sieben, A. & Straub, J. (1973). *Coming of age in Samoa*. Penguin.

Merton R. K. (1973). *The Sociology of Science: Theoretical and Empirical Investigations*. Chicago: Univ. Chicago Press

Milkowski, M., Hensel, W.M. & Hohol, M. J. (2018) Replicability or reproducibility? On the replication crisis in computational neuroscience and sharing only relevant detail. *Journal of Computational Neuroscience 45*, 163-172. https://doi.org/10.1007/s10827-018-0702-z.

Murphy, K.R. & Aguinis, H. J. (2019). HARKing: How Badly Can Cherry-Picking and Question Trolling Produce Bias in Published Results?, *Journal of Business and Psychology*, *34*, 1-17. https://doi.org/10.1007/s10869-017-9524-7.

National Academies of Sciences, Engineering, and Medicine. (2019). *Reproducibility and Replicability in Science.* The National Academies Press. https://doi.org/10.17226/25303.

Mitchell, J. (2014, July 1). *On the emptiness of failed replication*. https://www.discovermagazine.com/mind/on-on-the-emptiness-of-failed-replications#.XQ4LaegzaUl

Open Science Collaboration. (2015). *Estimating the reproducibility of psychological science*. *349*(6251). https://osf.io/ezcuj/wiki/home/

Peels, R. (2019). Replicability and replication in the humanities. *Research Integrity and Peer Review*. *4*(2), 1-12

Peng, R. D. (2011). Reproducible research in computational science. *Science*, *334*(6060), 1226-1227.

Peterson, D. & Freese, J. (2017). Replication in social science. *Annual Review of Sociology*, *43*, 147-165.

Popper, K. R. (1959). *The Logic of Scientific Discovery*. Routledge.

Popper, K. R. (1963). Science as falsification. *Conjectures and Refutations*, 33-39.

Pusztai, L., & Hatzis, C., & Andre, F. (2013). Reproducibility of research and preclinical validation: problems and solutions. *Nature Reviews Clinical Oncology*, *10*(12), 720-724

Radder, H. (1996). *In and about the world: philosophical studies of science and technology*. State University of New York Press.

Reed, I. (2008). Justifying sociological knowledge: From realism to interpretation. *Sociological Theory*, *26*(2),101-129.

Reinhart, C. M., & Rogoff, K. S. (2010). Growth in a time of debt. *American Economic Review*, *100*(2), 573-78.

Reinhart, M. (2016). *Reproducibility in the Social Sciences. Reproducibility: Principles, Problems, Practices, and Prospects.* Wiley. https://doi.org/10.1002/9781118865064.ch19. 407-423

Riley, D. (2007). The paradox of positivism. *Social Science History*, *31*(1), 115-126. https://doi.org/10.1017/S0145553200013687

Schmidt, S. (2009). Shall we really do it again? The powerful concept of replication is neglected in the social sciences. *Review of General Psychology*, *13*(2), 90-100.

Seife, C. (2015). Research misconduct identified by the US Food and Drug Administration: out of sight, out of mind, out of the peer-reviewed literature. *JAMA internal medicine*, *175*(4), 567–577. https://doi.org/10.1001/jamainternmed.2014.7774

Seyedsayamdost, H. (2015). On normativity and epistemic intuitions: Failure of replication. *Episteme*, *12*(1), 95-116.

Sherif, B. (2001). The ambiguity of boundaries in the fieldwork experience: Establishing rapport and negotiating insider/outsider status. *Qualitative Inquiry*, *7*(4), 436-447. https://doi.org/10.1177/107780040100700403

Simon, M. K. & Goes, J. (2012): *Dissertation and Scholarly Research: Recipes for Success: 2013 Edition*, CreateSpace Independent Publishing Platform.

Simonsohn, U., Nelson, L. D. & Simmons, J. P. (2014). P-curve: a key to the file-drawer problem. *Journal of Experimental Psychology: General, 143*(2), 534–547. https://doi.org/10.1037/a0033242

Smaldino, P. E., & McElreath, R. (2016). The natural selection of bad science. *Royal Society Open Science*. *3*(9), 1-17. https://doi.org/10.1098/rsos.160384.

Taylor, C., Gibbs, G. R. & Lewins, A. (2005): *Quality of qualitative analysis*. Available at onlineqda.hud.ac.uk/Intro_QDA/qualitative_analysis.php.

Testing the reproducibility of social science research. (2019, July 10). *ScienceDaily*. www.sciencedaily.com/releases/2018/08/180827121303.htm

The Cyril Burt Affair. (2018, April 29). *Human Intelligence*. https://www.intelltheory.com/burtaffair.shtml

The science 'reproducibility crisis'–and what can be done about it. (2017, March 15). http://theconversation.com/the-science-reproducibility-crisis-and-what-can-be-done-about-it-74198

Travis, G. D. L. (1981). Replicating replication? Aspects of the social construction of learning in planarian worms. *Social Studies of Science*, *11*(1), 11–32. https://doi.org/10.1177/030631278101100102

Uscinski, J. E. & Butler, R. W. (2013). The epistemology of fact checking. *Critical Review*, *25*(2), 162-180.

Vanpaemel, W., Vermorgen, M., Deriemaecker, L. & Storms, G. (2015). Are we wasting a good crisis? The availability of psychological research data after the storm. *Collabra*. *1*(1), 1–5. https://doi.org/10.1525/collabra.13.

Wang, Z., Solloway, T., Shiffrin, R. M. & Busemeyer, J. R. (2014). Context effects produced by question orders reveal quantum nature of human judgments. *Proceedings of the National Academy of Sciences*, *111*(26), 9431-9436.

Watson, J. B., & Rayner, R. (1920). Conditioned emotional reactions. *Journal of Experimental Psychology*, *3*(1), 1.

Watts, A. (2017, March 6). *Science has a reproducibility crisis*. https://wattsupwiththat.com/2017/03/06/science-has-a-reproducibility-crisis/

Wikipedia contributors. (2019, June 28). *Piltdown Man. In Wikipedia, The Free Encyclopedia.* Retrieved: 05.07.2019. https://en.wikipedia.org/w/index.php?title=Piltdown_Man&oldid=903827001

Young, C. & Horvath, A. (2015). *Sociologists need to be better at replication. orgtheory.net, Aug. 11*. Retrieved: 25.06.2019. https://orgtheory.wordpress.com/2015/08/11/sociologists-need-to-be-better-at-replication-a-guestpost-by-cristobal-young/

GENİŞLETİLMİŞ ÖZET

Tekrarlanabilirlik: Pozitivist Sosyal Bilimlerin 21'inci Yüzyil Krizi

Bilimsel tekrarlanabilirlik, evrensel ve kendi kendini destekleyen (doğrulayan) yöntem ile "hakikati" keşfetmeye yönelik pozitivist girişimin özünü oluşturur. Bu sebeple, tekrarlanabilirlik ilkesi hem doğa bilimleri hem de sosyal bilimler için önemli bir tartışma odağı olmuştur. Tekrarlanabilirlik krizi, sosyal psikoloji temelli çalışmaların tekrarı üzerine yapılan deneylerin başarısız olması sonucu ortaya çıkmış, süregelen bir metodolojik krizdir. Kriz, genel olarak tekrarlanabilirlik ilkesiyle çalışan tıbbi, doğal, sosyal ve diğer pozitivist bilimleri derinden sarsmıştır. Şimdiye kadar, tekrarlanabilirlik üzerine yapılan akademik tartışmalar her zaman akademi ile sınırlı kalmış ve medyanın konusu olmamıştır. Fakat 2000 sonrası bilimin doğruluğu, yol göstericiliği, güvenilirliği gibi temalar akademi çevresi dışında da sıklıkla tartışılagelmiştir. Bu da dikkatleri çeken bir mesele olarak bu araştırmanın gerekçesini oluşturmuştur. Bu makalenin amacı, 20. yüzyıla damgasını vuran pozitivizm eleştirileri doğrultusunda sosyal bilimlerdeki en son metodolojik tartışma olarak tekrarlanabilirlik konusunu tespit etmek, pozitivist tekrarlanabilirlik ve evrensellik ilkelerini hangi düşünürlerin ve düşünce okullarının eleştirdiğini ortaya koymak ve bu ilkelerin 21. yüzyıl sosyal bilimlerde hala bir tartışma konusu olup olmadığını göstermektir.

Tekrarlanabilirlik, yalnızca diğer bireyler tarafından yapılan çalışmaların tekrarına dayanan basit bir teknik gereklilik değil, daha çok pozitivizm tarafından şekillendirilen doğa ve sosyal bilimlerin temel yapı malzemesidir. İnsanlığın doğaya hükmetme aracı olarak tanımlanan bilimin 19'ncu ve 20'nci yüzyıllardaki epistemolojik ismi olan pozitivizme göre, bütün bilimsel araştırmaların tekrarlanabilmesi gerekmektedir. Bu, bilim insanlarının kendi çalışmalarını ve başkalarının çalışmalarını nasıl değerlendirmesi gerektiğini belirleyen bir mekanizmadır ve bilimsel meşruiyeti sağlayan tüm ilmi çalışmaların merkezindedir. Bilim olarak adlandırılan insan kapasitesine dayalı etkinlik hakikat iddiasında olup, pozitif bilim de tekrarlayan doğruluk arayışı içinde olduğundan, tekrarlanabilirlik ilkesini terk etmek pozitivizme göre tüm bilimsel uygulamaları ve bilahare bilimi terk etmek anlamına gelmektedir. Büyük bir makinenin dişlileri gibi birbirini tamamlayan tekrarlanabilirlik ilkesi, evrensellik ve nesnellik idealleri ile sıkı sıkıya bağlantılıdır. Evrensel bilgi, kopyalamaya dayanır. Diğer araştırmacıların sürekli tekrarlanan çalışmaları ile ulaşılacak evrensel yasalar (varsa) doğruluğu ifade eder. Burada nesnellik, tekrarlanan çalışmalarda yanlılığın olmaması anlamına gelir. Bu nedenle, pozitivist bir bilim anlayışı, çoğaltma, evrensellik, nesnellik ve gerçeğin peşinde koşma üzerine kuruludur. Gouldner'a göre, nesnellik olarak hakikat, aslında bu ilkeler etrafında oluşturulan hayali bir bilimsel komitenin varlığını sürdürebilmesi için bütünlüğün daha genel değerine atıfta bulunur (Gouldner, 1968, s.: 111). Bu ilkelerin herhangi birinin başarısızlığı, sıkı sıkıya bağlı olduğu diğer ilkelere zarar verir ve bilimsel uygulama ve topluluğun bütün bir anlayışını tehlikeye atar. Ek olarak, Merton'un (1973) belirttiği gibi, sosyolojik tekrarlanabilirlik, kaba ve hileli çalışmanın ortadan kaldırılabilmesi için bir sosyal kontrol mekanizması sağlar. Bununla birlikte, tekrarlamanın başarısızlığı, önceki çalışmaların hileli veya manipüle edilmiş olabileceği şüphesini uyandırır. Bu durum bilime olan güveni önemli ölçüde zedelemektedir.

2011 yılında patlak veren tekrarlanabilirlik krizi, pozitivist tekrarlanabilirlik ve evrensellik ilkelerini yeniden gündeme getirmiş ve eleştirilerin bir ölçüde haklı olduğunu ortaya çıkarmıştır. Bilimin meşru temeli olarak kabul edilen bir meta-yargıç olarak tekrarlanabilirlik ilkesi, araştırma nesnesinin araştırmacıdan bağımsız olmadığı durumlarda belirli zorluklar ortaya çıkarmaktadır. Bu kriz, sosyal psikolojideki araştırmaların büyük çoğunluğunun

tekrarlanamamasının bir sonucu olarak başlamış, daha sonra tüm sosyal bilimlere yayılmış ve bir bilimsel meşruiyet sorunu haline gelmiştir. Kriz sosyoloji bağlamında ele alındığında tekrarlanabilirliğin birçok sorunu beraberinde getirdiği tespit edilmiştir. İlk olarak, sosyolojik bilginin post-pozitivist yanlışlama modeliyle ilerleyemediği görülmüştür. Öte yandan, sosyolojik bir çalışmanın çoğaltılması, akademik çevrelerin ve dergi editörlerinin yenilikçi üretme taleplerini yerine getirmediği için finansman ve tanınma konusunda sorunlar yaratmaktadır. Diğer yandan, her bir çalışmanın tarihsel, sosyal ve politik mizaçlar tarafından belirlenen farklı varsayım ve ön kabullere dayandığı tespit edilmiştir. Araştırmacının araştırma karşısında pasif kaldığını iddia eden pozitivizm reddedilmiş ve araştırmacıların kasıtlı veya kasıtsız olarak verilerini manipüle edebildiği gösterilmiştir. Ayrıca, özellikle etik sorunlar nedeniyle, tekrarlama olasılığı sorunlu kabul edilmiştir. Nitel araştırmalar incelendiğinde, tekrarlamanın sosyolojik açıdan ideal olmadığı, araştırmalarda daha çok karşılıklı hesap verebilirlik ve anlayışın ön planda olduğu görülmektedir. Öte yandan kopyalama kriziyle birlikte pozitivist sosyal bilimlerin önemli bir handikapı ortaya çıkmıştır. Pozitivizmin, araştırmaların çok farklı alanlarda, farklı araçlar ve amaçlarla yapıldığı fikrini görmezden geldiği tespit edilmiştir. Bu, araştırmacıları araştırma ortamı ve kullanılan materyaller üzerinde maksimum kontrol sağlamaya yöneltmekte ve araştırmanın kendine özgü boyutlarını göz ardı ederek araştırmayı yalnızca yüzeysel bilim protokollerini tamamlamayı amaçlayan bir etkinlikle sınırlandırmaktadır. Kısacası, araştırmacılar yerel durumlarının sübjektif koşullarını görmezden gelmekte ve teorik formalitelere uymaya çalışmaktadır.

Çalışmanın sonucunda pozitivist iddiaların: tekrarlanma ve evrensellik ilkelerinin sosyolojide ontolojik, epistemolojik, bireysel ve yapısal yönlerden geçerliliğini yitirdiği sonucuna varılmıştır. Özellikle Alman Tarihselci Okul-Hermeneutik, Yorumlamacı Okul, Fenomenoloji, Post-modernizm gibi birçok ekolden eleştiri gelmiş, herhangi bir araştırmanın tekrarının teorik ve metodik sebepler dolayısıyla mümkün olmadığı, toplumların sui generis gerçekliği dolayısıyla evrensel yasaların var olamayacağı, tekrarlanabilirlik ve evrensellik ilkelerinin sosyal bilimsel açıdan ulaşılamayacak birer ütopya olduğu argümanları vurgulanmıştır.