2-2017

Theory and Methodology of Exploratory Social Science Research

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ABSTRACT

Confirmatory, deductive research cannot produce absolute truths, according Karl POPPER (2002). If we accept this premise, then it is worth giving inductive and explorative research another chance. Exploration can produce valid and insightful findings in the social sciences, if conducted in a transparent and self-reflexive way. It can also profit from applying dialectical thinking. This article proposes a rationale for exploration in the social sciences and it elaborates the criteria on which such research must stand.

HUMAN JOURNALS

INTRODUCTION

The social sciences have reached a moment of strong self-reflexivity. Feminist standpoint theory has firmly undermined the possibility of pretending to conduct "neutral" and "objective" research without considering one's own positionality in the research process. It is only by facing one's limitations and biases that one can hope to address them. There no longer is a legitimate justification for "playing the God trick" (HARAWAY, 1988) and pretending that one can do research from no-where, without a specific interest, while seeing everything. Methods provide no solution to this situation – particularly not quantitative methods. To the contrary, statistics and regression analysis have contributed more than any other method to introducing, and hiding, bias into the research process and its findings. No other method is so connected to the invention of European white male supremacy than statistics. Regression analysis was, after all, invented by Francis Galton precisely to prove white European, male superiority.

Thus, the insights about science as a social activity of knowledge production and the demands for "strong objectivity" put forward by feminist standpoint theorists have thoroughly undermined any possibility of naively claiming neutrality and traditional objectivity simply because one follows "scientific methods." (HARDING, 1991, 1993, 2008) The only possible way forward is to face the consequences of inevitable bias and partiality and to seek ways to limit, or counterbalance, its impact.

Furthermore, the deductive research process, as Karl POPPER (2002) readily admitted, is unable to produce *the* truth. Given the limitations of deduction and the need for strong objectivity and self-reflexivity, induction and exploration deserve another look – even more so as the different attempts to establish an inductive, as well as an abductive, research program, proposed in different ways by such authors as Jo REICHERTZ (2003), Udo KELLE (2005), Pedro BENDASOLLI (2013), and Hubert KNOBLAUCH (2014), have, in my evaluation, all fallen short of providing a sold epistemological foundation for conducting inductive as well as abductive research. The same is true for the different, earlier, attempts to justify inductive research of such authors as Charles PEIRCE (1974, 1979), Herbert BLUMER (1954), Barney GLASER (1978, 1992), Anselm STRAUSS (1987, 1990), as well as Anselm STRAUSS and Julliet CORBIN (1990).

Citation: Bernd Reiter. Ijsrm.Human, 2017; Vol. 5 (4): 129-150.

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This article aims at proposing foundations for exploratory research in the social sciences. Inspired by the recent debates on qualitative methods (GERRING, 2001; GEORGE & BENNETT, 2005; BRADY & COLLIER, 2004; MAHONEY & RUESCHEMEYER, 2003; RAGIN, 2008) I seek to demonstrate that exploratory research also has a place in the social sciences. To be reliable, exploratory research should be conducted in a transparent, honest and strongly self-reflexive way - and follow a set of guidelines to ensure its reliability. Exploratory research, if conducted in this fashion, can achieve great validity and provide new and innovative ways to analyze reality.

To legitimize and provide a solid epistemological basis for exploratory research in the social sciences, it has to be based on a philosophy of science; it must be articulated within an epistemological framework; and it must be able to formulate a comprehensive methodological framework to justify its methods. It must also be based on an explicit ontology of the social sciences in order to determine what is accepted as "real" and as factual. In this article, I seek to first elaborate the foundations of exploratory research. I then offer some rules and guidelines aimed at ensuring reliability and objectivity. In doing so, I hope to take a step in the direction outlined above.

The Limits of Confirmatory Social Science Research

Confirmatory social science dominates the field. Most social scientists use quantitative or qualitative methods in order to prove, or corroborate, their hypotheses. Confirmatory research is what graduate students train for and what qualifies most researchers for a tenure-track academic job. Confirmatory research has indeed many advantages—some of which are also very relevant for exploratory research. Confirmatory research allows for a clear formulation of a theory to be tested in its application, commonly formulated as hypotheses; it allows for bringing order into the research process by formulating theories and related hypotheses up front, and developing a research design and the methodological tools best suited to address the research question, which is also formulated up front. By formulating research questions, theories, hypotheses, a research design, and a method—and by forcing the researcher to operationalize the involved terms and concepts and think of indicators to assess them—confirmatory research provides a clear scheme that is easy to follow and hence easy to teach. If trained appropriately in confirmatory research

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techniques, researchers know how to proceed. Taking inspiration from the work of Karl POPPER [1936] (2002) and Carl HEMPEL (1966), confirmatory research provides schematic and standardized procedures and thus offers a mental map for how inquiry proceeds.

When testing hypotheses, we normally are not pressed to justify where these hypotheses came from. Popper argues that asking this question is falling prey to "psychologism." After all, argues Popper, when doing science, we need to concern ourselves not with where ideas come from, but how to assess them systematically. Asking where ideas come from, according Popper, is a question for the psychologist and of no relevance to the scientific endeavor.

This neglect of scrutinizing where theories and hypotheses come from, however, has led to a systematic neglect of appreciating the bias that goes into theory and hypothesis formulation. But, as such feminist scholars as Sandra HARDING (1991) and Donna HARAWAY (1988) have convincingly argued, research cannot start from nowhere. Who we are, our interests, backgrounds, training, and culture all influence what questions we ask, how we ask them, and even what we accept as confirming evidence. Our approach to knowledge is "situated," and the worst thing we can do is to pretend that it is not, thus playing the "God trick" (HARAWAY, 1988). If we fail to appreciate our potential biases, limitations, and partial views, then we give away any chance to consider, address, let alone mitigate or control for these biases and limitations.

As we are no Gods, we approach reality necessarily from a specific angle. Our interests are shaped by who we are and where we stand – and thus what we are able to perceive. What we accept as a confirmation of our hypotheses is influenced by our previously held believes and convictions. Even what we are able to perceive as meaningful and patterned is influenced by what we already know, as explained already in the 18th century by Immanuel KANT, in his thesis of transcendental idealism. Writes KANT in his *Critique of Pure Reason*:

"We have therefore wanted to say that all our intuition is nothing but the representation of appearance; that the things that we intuit are not in themselves what we intuit them to be, nor are their relations so constituted in themselves as they appear to us; and that if we remove our own subject or even only the subjective constitution of the senses in general, then all constitution, all relations of objects in space and time, indeed space and time themselves would disappear, and as

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appearances they cannot exist in themselves, but only in us. What may be the case with objects in themselves and abstracted from all this receptivity of our sensibility remains entirely unknown to us. We are acquainted with nothing except our way of perceiving them, which is peculiar to us, and which therefore does not necessarily pertain to every being, though to be sure it pertains to every human being." (KANT, 1781, p.138)

The skepticism expressed here by Kant does not claim that the material world exists only in our minds. He instead argues that that we cannot know anything about how the world *really* is, as it is our own naming, categorizing, and ordering that gives it meaning – to us. Our perception of the world is influenced by who we are and what we know. No amount of method can lead us out of this situation. If "rigorous" methods had this power, white, European male scientists would have never been able to hold on for so long to Eugenics, phrenology, craniology, and the "scientific truth" that found women and non-whites to be inferior to European white males. Distinguished professors, such as William Dandridge Peck (Harvard), John C. Warren (Harvard), and Samuel George Morton (Pennsylvania Medical College) used impeccable methods to measure craniums – but they failed to include their own limitations and cultural biases into their measurements. Francis Galton, one of the inventors of statistical research, was, after all, also one of the founders of the Eugenics Movement, which classified different people and groups along a scale of "fitness" and advocated different ways to avoid the reproduction of those deemed "unfit." Galton was knighted and received several academic distinctions, while never considering that his way of classifying people and groups was indeed biased by his own cultural situadedness.

The worst we can do, as researchers, is to pretend to see it all while producing partial knowledge instead – but framing our findings as "universally true." When we do that, we produce bad science. To produce a better science, or a "strong objectivity" (HARDING, 1991), we need to consider our situatedness, or positionality, our limitations, and biases. We also need to consider how we are perceived by those we seek to research and what sort of information might be out of our reach, or maybe even withheld from us, due to who we are and how we are perceived. We need to, finally, include ourselves in our investigation and introduce a strong self-reflexivity into the core of the research process. For inductive and exploratory research, this means, first, to lay open, and question, one's research interest. The research questions we ask and the initial

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hypotheses we formulate are not only influenced by who we are; they are constituted by our very being in the world, our culture, context, biography, sexual, gender, and racial backgrounds, and oftentimes, by the sort of funding we receive. When conducting self-reflexive research, we need to unveil this context and the motivations that drive us. We also need to reflect on, and include, the 'why' of our research and the 'for whom.' In truly self-reflective and (self)critical research, we cannot afford to pretend that what happens with our work is not our responsibility.

These are hard questions for most social scientists to answer, as the honest answer to the question 'for whom' and to 'whose benefit,' in many cases will be 'for myself,' or 'for my tenure and promotion.' A social scientist producing work only for him-, or herself is, however, in a serious legitimacy crisis as, in general, 'for myself' is not enough.

As if this failure to include interest, situatedness, and positionality into the research process were not enough, confirmatory and deductive research has another weakness. As Popper has made clear, theories cannot be proved. He shows that "theories are not verifiable, but can be corroborated." (POPPER, 2002, p. 248) POPPER also states "the old scientific ideal of episteme - absolutely certain, demonstrable knowledge - has proved to be an idol. The demand for scientific objectivity makes it inevitable that every scientific statement remain tentative forever." (POPPER, 2002, p. 280) In other words, there is no way of closing the gap that forever separates our minds from empirical reality. All our theories, models and explanations of reality will always remain tentative, because they are products of our own, limited, minds and nothing can guarantee that reality behaves according to our ideas. We strive to find laws - but nature and human behavior might not follow any laws. We can identify causal mechanisms, but we have no guarantee that history unfolds along a cause-effect pattern. Independent variables will always remain mental constructs and they will never be truly independent from other factors. Dependent variables actually depend on much more than the independent variables we have chosen to examine.

Karl POPPER (2002) has thus put a heavy burden on the shoulders of confirmatory research. Confirmatory researchers have responded to this challenge by developing ever-new and more reliable methods, computer programs, and other data processing machines, but the resulting reliability only applies to those same methods, programs and machines - never the findings.

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Confirmatory research is highly efficient in improving the reliability of their own methods, but completely unable to deal with the basic problem of how their findings relate to reality. To be able to transform complex sensorial information into data that can be fed to the data processing machines that are able to correlate them in different ways, sensorial information must be broken down into codes – in most cases, binary codes of 0s and 1s. Statistical research relies on coding, that is: fitting reality into processable data. It is here that its greatest weakness lies, as in the jump from sensorial information to processable data, much of the relevant information is lost. Ultimately, then, the strength of statistical data processing is bought with a weakness in validity, producing a sort of paradox: The more reliable scientific methods, the less valid their findings.

Often, deductive research in the social sciences, particularly the research based on large data sets and statistics, fails to produce the kinds of results the advocates of the "behavioral revolution" of the 1950s had hoped for. Most of this research confronts the reader with difficult-to-understand technical jargon, complicated mathematical equations, and findings that offer little understanding and even less learning. The discussion about this research tends to focus on the methodological apparatuses applied, thus making it a discussion among experts, while loosing sight of its relevance to a broader audience and its application. Instead of achieving more reliable information about the social world, this kind of research has created a new problem: it produces an abundance of findings that are not intelligible, not accessible, and thus not relevant to a broader audience. While it is clear that having a well-justified methodology and reliable methods in social science research is important, the long history of statistical research in the social sciences also makes clear that social inquiry cannot be reduced to a technique and irrevocably remains a skill and an art. (FEYERABEND, 2010)

Indeed, if POPPER (2002) is right and achieving absolute truths about reality, especially human reality, is out of our reach when employing deductive scientific research apparatuses, then what can, and should, science, and social sciences in particular, do? Exploratory and inductive research programs offer some attractive alternatives. They are based on an explicit recognition that all research is provisional; that reality is partly a social construction; that researchers are part of the reality they analyze; and that the words and categories we use to explain reality arise from our own minds and not from reality. In other words, what we perceive and how we perceive it has more to do with us than with the reality we observe. Explicitly taking all these factors into

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account and thus discrediting the myth of the possibility of neutral, objective and value free research, the exploratory and inductive social science research program offers a radically different approach to social science and research.

Social Science Ontology and the Importance of A-Priori Theorizing

Any fact must be perceived and understood to become a "fact." First, it must be perceived by someone, interpreted, and finally used in the recipient's own effort to make sense of it, placing it within a frame of reference. Feminist epistemology, as presented by authors such as Donna HARAWAY (1988) and Sandra HARDING (1991) noted this long ago and so have some sociologists of knowledge (e.g. LATOUR, WOOLGAR, and SALK, 1986). Reality is unescapably entangled with the human condition.

This means that the models, ideas and theories that we already know and understand influence the way we perceive reality, as well as *what* reality we perceive. (MUSGRAVE, 2000) If the analytical tools available to us only provide one way to "read," understand and give meaning to our sensory impressions - then this will be the only way we perceive and understand reality, or: this is the only reality we get to know and understand. If, for instance, we understand the world in terms of "race," then what race is what we will see. The same is true for seeing and understanding the world in terms of class, gender, religion, and concepts such as market, class struggle, balance, etc.

The researcher's task, then, is still inspired by Paulo FREIRE (1993) and Jean-Paul SARTRE (1994). It is to amplify and extend our conceptual tools and therefore to be able to see more, more clearly, and more accurately. If research is critically dependent on our own mental models, categories, theories, and concepts - then better and more accurate research can be achieved the more we amplify the analytical repertoire, or toolbox, of the researcher. If our mental structures determine, in part, what we can perceive - then we have to find ways to amplify our mental structures. The process to do so is properly called *learning* and it is strongly and directly related to education, more precisely the German "Bildung" - that is: a historical, reflexive, and self-critical perception and understanding of the world.

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Thus we can state: Theories are tentative explanations of how and why the different elements of the world relate to each other. This does not mean they really do. Theorizing about - and therefore explanation of - the world is an effort to make sense of it, to sort and put it in the causal sequence. Theorizing sheds light on a well-defined and limited segment of reality. Good theories lead to good questions – and good questions allow us to discover new aspects of reality.

The good social science question is never "what really happened? " What really happened will be depend on the accounts of each participant. In this context, a good question is one that is fruitful, because it allows us to explore hitherto unexplored aspects and possibilities of explanation and causation. The good explanation is plausible and it makes sense; it allows for the explanation of a phenomenon in a clear, simple and compelling way. It is compelling when the observed reality does not contradict the proposed explanation of its causal connection. Theories thus cannot be true or false, as they have no ontological status. As thought patterns they may be more or less helpful and supportive of our ongoing effort to explain the world, to make sense of it. (POPPER, 2002)

A priori theorizing and the act of formulating explicit hypotheses before conducting research is necessary in both confirmatory, as well as in exploratory research. That is precisely because there is no a-theoretical perception of the world. Therefore, a pure exploration, starting from zero, is impossible. Our ideologies, knowledge, implicit theories, as well as our already available pool of explanations are part of our positionality and situatedness and they determine, and limit, what we can understand and perceive as meaningful. To produce more scientific arguments, we must consider and include these theories into the research process and make them explicit.

Furthermore, as we cannot perceive "reality" - but only small segments of it, the explicit formulation of a priori theory and hypothesis is the only way to limit and focus our approach to a complex reality. Without theory, we do not know where to look; without theory we cannot establish which factors may be relevant to our discussion. Thus, theories establish order and give relevance to reality – even if this order springs from our own mind. Without theory, we would observe a noisy mess that does not contain any information, lacking any structure and "meaning." Our own perception, i.e. what we perceive as meaningful and how we perceive it, is influenced, indeed determined, by what we already know – by our preconceptions about the

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world. Pretending to be neutral and starting an investigation without an already formulated theory leads us necessarily to introduce bias - without recognizing it. A purely explorative perception of the world is therefore impossible, since we cannot let go of our preconceived ideas, notions, categories, explanatory models and theories.

The different attempts to escape this "prison of the mind," in the form of Grounded Theory (GLASER & STRAUSS, 1967; GLASER, 1978, 1992; STRAUSS, 1987, 1990, as well as STRAUSS and CORBIN, 1990), "abduction" (PEIRCE, 1974, 1979; REICHERTZ, 2003; KELLE, 2005; BENDASOLLI, 2013, and KNOBLAUCH, 2014), or "sensitizing concepts" (BLUMER, 1954) – all fail to appreciate the depth of the abyss separating human consciousness from reality. None of these approaches, in addition, takes adequate account of feminist standpoint theory and epistemology (understandably so, in some, older, cases).

It is, however, precisely feminist standpoint theory that puts the final nail into the coffin of approaching the world in a neutral, objective, or even vaguely postulated "open mind." There is no escape from who we are and how we are perceived and instead of pretending to be neutral and approach reality objectively by somehow "trying hard" to be neutral, or "bracketing" our positionality, we must take our situatedness and our standpoint into account and embrace the situatedness of our position and the partiality of our knowledge – if we want to produce a "strong objectivity." In the words of Sandra Harding: "A stronger, more adequate notion of objectivity would require methods for systematically examining all of the social values shaping a particular process, not just those that happen to differ between the members of a scientific community." (HARDING, 1993, p.18)[1]

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[1] In addition, while the process of "abduction," as described by the several authors mentioned above, captures some of the practical proceedings in an exploratory and iterative research process, it lacks the philosophical grounding, as well as the concrete programmatic components of the process of the hermeneutic circle, elaborated by Hans-Georg GADAMER (1994). GADAMER's, *Truth and Method*, still provides the most satisfying explanation for how to understand texts, others, and reality as text, or discourse – and it provides the only logically coherent account on how to do so while taking feminist standpoint epistemology adequately into account. Compared to GADAMER's (1994) solid treatment of understanding and interpretation and HARDING's (1993) as well as HARAWAY's (1988) treatment of situatedness and partiality, the attempts to circumvent basic epistemological problems offered by the aforementioned group of authors appear weak, unsatisfying, and operating on the level of semantics alone. If we cannot perceive the world, and others, outside of our own mental, personal, social, cultural, racial, and gendered situatedness – renaming induction into "abduction" will not help.

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The only option we have, as observers and explainers of reality and others contained in it, is to make our theoretical frameworks explicit and consider them. This means we have to be conscious of our own positionality as researchers (HARAWAY, 1988) and we always start our questions based on a previously formulated theory – even if we are willing and open to reformulate our initial theories and explanations as we proceed in the process of learning and expanding our conceptual tools.

However, an exploratory research program in this way is not to give new names to things. Naming things and believing things "really" are essentially like their names means falling into the trap of reification. Explorative research instead aims at applying new words, concepts, explanations, theories, and hypotheses to reality with the expectation of offering new ways of seeing and perceiving how this segment of reality works, how it is organized, or, more specifically how and in what way different factors relate to each other causally. In other words, it offers, an alternative way to "make sense" of the world, offering new approaches and angles, and counter-hegemonic alternatives to the act of explaining the world.

By observing and analyzing reality from a new and different angle, we can expect to unveil previously hidden facets of reality - if we are able to demonstrate the credibility and robustness of the causal connection that our new approach stipulates. This effort constitutes the core of exploratory research in the social sciences. This we can do only if we are fully aware of where we come from, about what our positionality is and what are our limits are. This kind of work, by definition, is inductive. The outcome of such research is that we are extending, expanding and diversifying our tools and frameworks with the expectation that we will be able to perceive more, better and differently, and that we will be able to make sense of what we previously found meaningless.

Microfoundations and Causal Mechanisms

Roy BHASKAR (2008), Daniel LITTLE (1998), and Andrew SAYER (2003) have all argued that social life does not follow rules and hard laws. Hence, the regularities in human behavior we are able to observe are not fundamental, foundational, or 'governing' in Little's terminology, as they do not spring from any sort of law. They are phenomenal and as such they do not reveal anything about the causal mechanism that produced them. This is so, because human behavior,

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even though we can sort it into rules and patterns, particularly when aggregated, always is, at least in part, willful. In a strong sense there is nothing we can learn from the regularities, or patterns, plotted from the *outcomes* of human behavior, because these regularities are not fixed or given and are not the result of any sort of foundational law. Humans do not necessarily respond to poverty with criminal activity and less formal educational does not necessarily lead to less income. An exclusive focus on behavioral outcomes and manifest behavior thus leaves us in the dark about the reasons for such behavior, its causes and motivations. In addition, by exclusively focusing on behavioral outcomes, we foreclose the possibility of understanding behavior and thus learn from it. What we get instead is a *mechanistic* depiction of *social* reality. The more sophisticated the statistical tools employed in this sort of analysis, the more it moves away from human, social, and hence culturally influenced behavior. The mechanistic models still springing from the behavioralist revolution lead further and further away from capturing and understanding human and social behavior.

By contrast, exploratory and inductive research focuses not on outcomes or results of human behavior, but directly on the causal mechanisms that underlie and produce social phenomena. Such a focus on causal mechanisms allows the researcher to achieve a learning process based on the "why" and "how" something happened – while always recognizing that this explanation flows out of a theory held by the same investigator. A commitment to micro foundations here means to trace back social phenomena and structural forces to individual behavior and the motivations and cultural context producing it. While such a commitment allows for the analysis of structures as causally relevant in facilitating, or restricting, human behavior – it demands that even the most complex structure be understood, and analyzed, as the result of individual human behavior. Concretely, this means a recognition that all structures are human-made and the result of human action. They all can be traced back to individuals and the organizations and groups humans form to advance their interest. Structures are, in other words, constructed and it is the task of social science to analytically deconstruct them in order to reveal their purpose and functioning.

When focusing on the micro foundations of human behavior and the causal mechanisms underlying aggregate human behavior, we thus focus directly on the origins of different outcomes of social, that is, human behavior.

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What, then, is a causal mechanism? Causality cannot be assumed as given and having an independent ontology "out there" – but to the contrary: causality is a way of looking at the world, giving it a specific order and putting it into mental sequence. Causes, in short, beyond the trivial ones, are imprinted on the world by the observer or researcher. Different researchers ask different questions and employ different research methods – and thus produce different kinds of causality. Concretely, regression research proposes co-presence of correlational factors, process tracing proposes temporal sequencing as causally relevant and set theoretic analysis proposes shared membership in different sets as its basic logic of cause.

In most exploratory research, causal mechanisms are assumed to work sequentially, that is in temporary order, so that one event causes, or produces, the next. The prime method to establish such causal sequencing is process tracing. Processes tracing *assumes* necessity in the world (SAYER, 2003) by assuming the power of structure and agency in having, forcing, producing, limiting, or enabling certain consequences. However, we should remain cautious about the ontological status of these relations in the social world – given the absence of laws. When hypothesizing a causal mechanism first, however, we can then assess to what degree reality conforms to our expectations and thus reach reliable statements about the importance, relevance, and magnitude of our causal mechanism. Once we detect a causal mechanism behind the manifest behavior, we can then stipulate and to some degree assess how relevant this causal mechanism is. The statements we can formulate based on this approach will be of the kind: if the causal mechanism x is present, it is very likely that y will follow – all else remaining equal. To illustrate: once we understand why a group of people react to perceived foreigners with racist and exclusionary attitudes, we can then proceed to examine how important this causal mechanism is elsewhere and in other situations.

Exploratory and inductive research thus allows for limited generalizations, not based on the outcome, but on the presence, or partial presence, or shared causal mechanisms. If we find out that one group of workers, in an economically depressed situation, demonstrates racists attitudes towards foreigners and immigrants *because they perceive them as a threat to their already precarious jobs and livelihoods*, then we can test to see if other workers, who share similar perceptions, demonstrate the same attitudes towards foreigners and immigrants. When proceeding this way, we thus generalize from the causal mechanism, not the outcome and by

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doing so we add to our understanding of the *why* of racist attitudes. Such research also enables us to then think about possible solutions to racist attitudes – because we understand what causes them. None of this is possible in confirmatory, behavioralist, statistical research.

The prime way to assess the importance of causal mechanisms is through conducting case studies. (GEORGE & BENNETT, 2005)

An Inductive / Exploratory Research Program

To accept the provisionality of one's conclusions and explanations about reality implies avoiding exclusive claims about reality. It means recognizing, explicitly, that all explanations are partial, incomplete, and open to revision, or: that all theories are under-determining, leaving much room for alternative and competing explanations even of the same segment of reality.

If our theories and assumptions about the world cannot close the gap that separates them from reality and if theories and hypotheses have more to do with our own mental, social, and cultural conditions than with the "objective" reality we experience and observe, then our theories and ideas only allow us to explain and make sense of the world for ourselves. Empirical research, then, is an endeavor where a researcher seeks to explain a well-defined segment of reality to him-, or herself. This also implies that what makes sense to one researcher does not necessarily make sense to another, as the positionality of each determines what a person deems relevant and significant.

If successful, an explanation can provide a fruitful and plausible way to see and explain a segment of reality to a specific researcher, given his or her positionality. An explanation so derived will never be the only way to explain this reality. This then leads to a more modest formulation of assertions about reality and how reality "really" is. Instead of advancing arguments that make exclusive claims about truth, exploratory research offers more or less plausible and therefore fruitful ways to examine and explain a limited segment of reality.

Following the insights provided by Charles RAGIN (2014), qualitative research in the social sciences has no way of truly testing a theory or explanatory model, as the number of possibly relevant factors, or variables, tends to exceed the number of available cases, thus creating a "degrees of freedom" problem. (RAGIN, 2014:11) Instead of "testing theory," as most

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confirmatory research sets out to do, ignoring the insights of even Karl POPPER (2002) on whose insights this kind of research builds, inductive and exploratory research openly embraces a *using* of theory in order to assess its explanatory strength and predictive power and make sense, or explain, a previously defined segment of reality. Qualitative, inductive and hence exploratory research sets out to explain limited segments of reality by suggesting a causal order, and sequence, of events. It does not claim that this order is inherent in reality, but instead remains skeptical about the "true" nature of causality in the world and only suggest a useful and helpful way to explain it by putting in into causal order.

Exploratory research thus *assumes* causal necessity in the world, but only for the purpose of suggesting a helpful and useful way of explaining it. As this formulation already suggests, usefulness is dependent on the aim of the research, as the first question arising from this formulation is: useful for what and to whom? Exploratory inductive research thus cannot escape a critical positioning of the researcher and his or her interest and positionality with regard to the research conducted.

In terms of procedure, this means that a research must start any research project by first explaining his or her own positionality and interest in this project. This includes a critical reflection on the limits one's positionality imposes on the research – and a strategy to address, mitigate, or even overcome these limits. While a total overcoming of one's limitation is out of reach, much can be accomplished by explicitly addressing biases and shortcomings of access and understanding. This could mean working in teams and comparing findings obtained by males to those obtained by females; white and black researchers; researchers sharing the cultural framework of those researched to those by foreigners; etc. A strategic addressing of shortcomings and biases can only be achieved, or even designed, after the limitations of the initial researcher have been recognized. The insights driving an exploratory and inductive research project are derived from hermeneutics, or more precisely, the hermeneutic circle.

Exploratory Research Design

Exploratory research, similar to confirmatory research, must begin with an explicit theory and clear and precisely formulated hypotheses. This is so, because taking positionality and partiality of research seriously means, first and foremost, that a pure exploration of reality is impossible,

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just as bracketing of the researcher's identity and cultural background are impossible. Instead of a "grounded" theorizing, exploratory and inductive research demands an a-priori explanation or theory and hypothesis as a first step. Different from purely deductive research, however, it asks, in the second step, how the positionality and situatedness of the researcher impacts this initial theorizing and it demands a critical treatment, and justification, for the selection of one theory over another.

Unlike confirmatory research, exploratory research does not aim at testing these hypotheses, since they cannot be proved, as POPPER (2002) has shown. Exploratory research instead asks how much a theory and a hypothesis can explain, how well it can explain it, or how meaningful and fruitful an explanation is. Explorative research is successful if a previously formulated theory and a hypothesis explain something very well, which means the explanation provides a strong and robust connection between a cause and an outcome. Exploratory research seeks to provide new explanations that have been previously overlooked and it can do so through the active involvement of the researcher in the process of amplifying his or her conceptual tools to allow him or her to raised new questions and provide new explanations of a given reality, from a new angle.

As the process of "making sense" of a phenomenon is a gradual process that can be compared to a learning process, exploratory research is characterized by a process of reformulating and adapting explanations, theories, and initial hypotheses inductively. It begins, in other words similar to deductive research, with previously formulated theories - but it does not stop there. Instead, it uses empirical data to refine, adapt, or specify and reformulate theories and initial hypotheses to the point that the observed makes more sense to the observer and is thus explained better, i.e. in a more plausible and consistent way. Instead of a pure discovery, we must content ourselves in this way, with a gradual expansion of our conceptual tools of perception that allows us a better, or deeper understanding of the world based on what we already know.

Exploration thus starts at the same place of deduction, namely with the explicit formulation of theories and hypotheses. But different from deduction, exploration seeks to refine, adapt, or change the initial explanation in an itinerary process of applying other explanations to the observation in a forth-and-back between theory and reality. This process is best described and

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explained by Hans-Georg GADAMER (1994), in his masterpiece, *Truth and Method* ("Wahrheit und Methode"). Gadamer called the itinerary process of making sense of the reality the "hermeneutic circle." As researchers trying to explain a reality, we enter the hermeneutic circle with preliminary explanations and aware of our own interests and limitations. We compare details to contexts. We use specific information and compare it to the general, historical data and the contextual, as well as biographical information available about an author, or research subject, and his, or her, times. We use these to make sense of what we see, to put it in context. Initially not all information we perceive will make sense and we cannot explain everything we see, as we are able to place them within the relevant context. Gradually, we learn more about the segment of reality that we want to research and this learning suggests other ways to explain it. With this, we reformulate our explanations. Gradually, any and all new and additional empirical data will "makes sense" and "fall into place" – i.e. it fits our refined and reformulated explanation. Eventually we arrive at a point where we do not learn anything anymore, namely: the point where any new information just confirms our explanation. With this, the hermeneutic circle closes. The process of closing the hermeneutic circle, in other words, consists of a process of fusing interpretative horizons of the observer with the observed.

There are two important qualifications that characterize this process. On the one hand, a self-critical attitude is required from the researcher. A researcher should not attempt to "suspend" their beliefs and convictions - because this is impossible. On the contrary, she needs to make them explicit and integrate them into the process of understanding and explaining. In concrete terms, this means asking how our gender, our ethnicity, our social class, status, education, and background influence what we perceive and how we interpret the perceived. Only when we have more clarity on this, can we try to make them integral to our explanations - recognizing the limits of our findings. It also means that we have to be aware not just about who we are, but also how we are perceived by others and how this perception influences their behavior towards us.

The second qualification is that the process of understanding others is a potentially endless process, because we know that human consciousness operates in a closed and auto-poetic way, making a full understanding of the other impossible. In order to limit an investigation, again, we need a theory and a previously established hypothesis, connected to a precisely formulated research question. Only if we have a research question formulated in a precise and clear way can

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we limit the scope of our investigation. The potentially never-ending understanding and or never-closing hermeneutic circle closes with the answer to our research question. This explanation can then be shared, and if successful, it can assist others to formulate equally fruitful research questions and designs. This does not automatically translate into relativism. In exploratory research, there are better and worse explanations. What are the criteria?

Dialectics

A strong rationale for choosing an exploratory research design is that exploratory social science has the potential to be more insightful than confirmatory research by applying dialectical thinking. Dialectics, explains Theodor W. ADORNO (1973), means "to achieve something positive by means of negation." (ADORNO, 1973, p.XIX) The systematic treatment of dialects goes back to Georg Wilhelm Friedrich HEGEL and his *Phenomenology of the Spirit*, first published in Germany as part one of his System of Science in 1807. Hegelian dialectics has three components, namely circularity, where all existence is constituted by its own negation, thus forming a whole only through this circle; the contradiction and its resolve (Aufhebung); and idealism. (SARLEMIJN, 1971, p. 4)

In 1841, the young Karl MARX famously "put Hegel back on his feet" by stripping him from its idealistic component, and proposing a dialectic materialism instead. (MARX, 1971 [1841/42], p.28) It is this version of dialectics that inspired the critical theorists of the Frankfurt School, especially Theodor W. Adorno, Max Horkheimer, and Herbert Marcuse. Instead of Hegel's ontological dialectics, what interests exploratory social scientists today is the analytical methodology that emerges alongside its ontological counterpart, that is: a dialectics stripped of its ontological component and its belief in a rationally unfolding Zeitgeist. We are thus left with dialectical thinking as the sole, remaining component of the original dialectics.

According to MARCUSE (1960), "the power of negative thinking is the driving power of dialectical thought, used as a tool for analyzing the world of facts in terms of its internal inadequacy. (...) 'Inadequacy' implies a value judgment. Dialectical thought invalidates the a priori opposition of value and fact by understanding all facts as stages of a single process – a process in which subject and object are so joined that truth can be determined only within the subject-object totality. All facts embody the knower as well as the doer; they thus 'contain'

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subjectivity in their very structure." (MARCUSE, 1960, p.VIII)

In other words: there can be no objective or neutral social science, because the researcher is always and automatically involved and implicated with the object and the subjects of his or her inquiry. Dialectical thinking, i.e. thinking about inherent contradictions and understanding progress not as a linear process but a gradual unfolding of oppositional forces provides a fruitful way to conduct social science, even more so if and when social scientists accept that they themselves are part of history's unfolding and deeply involved in the reproduction of the knowledge they seek to analyze, which is what Marcuse suggest in the quote above.

A good example of this kind of thinking is provided by Karl MARX and Friedrich ENGELS (1848), in their attempt to describe and explain the revolutionary power of markets in the *Communist Manifesto*, as well as by HORKHEIMER & ADORNO (1944) in their *Dialectics of the Enlightenment*. Both books offer powerful diagnostics of our time.

HORKHEIMER & ADORNO (1944), for example, detected in the project of demystifying the world, dating back to ancient Greece and the word "enlightenment," the seeds of its reversal into an even worse state of affairs, where individuality succumbs to mass society and human desires and actions blindly follow the dictates of empty consumerism. Thus, the rational project of enlightenment becomes irrational. The lack of freedom that characterized the old world is replaced by a lack of freedom even worse: the fetishism of the market and the products that we seem compelled to buy, knowing that they will not bring happiness or peace of mind.

In a slight variation to the dialectical tradition, which is still burdened by the legacy of Hegel who suggested that history itself develops dialectically, explorative research uses dialectical thinking as an analytical tool and a way of approaching reality. It suggests thinking and analyzing history through the prism of dialectics – and thus allowing new perspectives and angles. A dialectical approach to phenomena allows us to go beyond the common knowledge in the social sciences, often the result of simplistic, dualistic models. Instead of focusing on dualisms and discrete phenomena, dialectics directs our attention to the processes and the connecting elements that link different phenomena together. This results in a search for processes, for causal mechanisms and dynamics, for contradictions and forces in tension, working in different directions.

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Therefore, when approaching reality dialectically, we can analyze connectivity, entanglements and mutual constitutions, and include realities where conflict and disputes over privileges and access is constant and inherent. Instead of hiding contradictions, dialectics suggests focusing on them and starting a new explanation from this very contradiction and then move outward. A good example of such a procedure is provided, for example, by the seminal work of Thomas HOLT (1992). In *The Problem of Freedom*, Holt anchors his analysis of post-abolition Jamaica precisely on the contradictions arising from freed slaves in the midst of plantation societies demanding free, or very cheap labor.

Conclusion: Explorative, Hermeneutic, and Dialectic Research

In this article, I have tried to argue and prove that inductive, explorative and dialectical inquiry can be reliable and rigorous when performed in a structured, transparent, and honest way. If successful, the findings and reflections so produced may help shed new light on phenomena that have been explained in part and in different ways. Moreover, if successful, exploratory research can help raise awareness among researchers and their audiences by revealing previously unsuspected connections and causal mechanisms. Instead of applying a ruler to social reality, exploratory research proposes to understand others and their cultures and societies through a process of fusing the interpretative horizons of the researcher and the researched. By applying dialectical thinking, it further suggests to focus not on plain and easy-to-understand regularities, but instead on contradictions.

Since the procedural devices necessary for conducting exploratory research are not large and sophisticated, explorative research also has something to offer to non-specialists and non-academics. There are no secrets or complicated procedures that require years of initiation. Instead, there is a committed dedication to the phenomenon under scrutiny and systematic, critical, open, and self-reflective research. Explorative research conducted thus becomes an instrument of the expansion of knowledge, awareness, and of conceptual and intellectual expansion. It has an emancipatory potential and is in the best sense a process of increasing awareness, education, and *Bildung*.

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