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BEYOND SOFT (AND HARD) SCIENCES TOWARDS COMPLEMENTARITY IN THE WAYS OF KNOWING: A COMMENTARY ON THE CENTRALITY OF CRITICAL QUALITATIVE RESEARCH IN THE FIELD OF HEALTH

PARA ALÉM DAS CIÊNCIAS MOLES (E DURAS) EM DIREÇÃO À COMPLEMENTARIDADE NAS MANEIRAS DE CONHECER: UM COMENTÁRIO SOBRE A CENTRALIDADE DA PESQUISA QUALITATIVA CRÍTICA NO CAMPO DA SAÚDE

MÁS ALLÁ DE LAS CIENCIAS BLANDAS (Y DURAS) HACIA LA COMPLEMENTARIEDAD EN LOS MODOS DE CONOCIMIENTO: UN COMENTARIO SOBRE LA CENTRALIDAD DE LA INVESTIGACIÓN CUALITATIVA CRÍTICA EN EL CAMPO DE LA SALUD

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Abstract: In the present comment on Gastaldo and Eakin's proposal for practising Soft Sciences in the field of Health, I have argued that the label Soft might not work in non-English language academic field to stress the importance of Human and Social Sciences. I agree with their emphasis on the importance of teaching about critical thinking in postgraduate programmes, but I suggest a more radical enterprise to review all postgraduate programmes towards a more encompassing view articulating science, philosophy and arts. Finally, I argued for the importance of the complementarity principle as a starting point to articulate knowledge not only from different sciences, Natural and Social, but also encompassing many ways of knowing, including ancient wisdom.

Keywords: Health Sciences. Postgraduate Studies. Complementarity Principle.

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1 INTRODUCTION

In the article “Practising soft sciences in the field of health”, Denise Gastaldo and Jean Eakin presented a compelling call for the relevance and need of Critical Qualitative Research in the field of Health. The reasons they exposed for this call are deeply rooted in problems that are beyond the field of Health. Indeed, they were first exposed by C. P. Snow in the lecture “The Two Cultures and the Scientific Revolution” in 1959 that became known as the Rede Lecture at Cambridge, later reviewed and published under the title: *The Two Cultures and a second look* (in Brazil it was published in 1995). Snow pointed out the rift that he himself experienced between Science and Humanities being on both sides. Snow was a fully accomplished physicist as well as writer of novels and essays. The opposing *ethos* striving on each side made it impossible to reconcile not only science and the humanities, but also between natural and biological sciences on one hand and social and human sciences on the other hand. Moreover, the Two Cultures led to yet another classification based on a biased judgement: the Hard Sciences, encompassing Natural and Biological Sciences, and the Soft Sciences, encompassing Human and Social Sciences. The former being representative of what was a truly scientific endeavour, the latter being representative of a failure to be scientific or on a positive note a bunch of disciplines trying to become scientific.

Apart of all prejudice prevailing in the judgement of both sciences, the rift is due to very different epistemics from each side, and it is also fuelled by the power struggle for the hegemony of the fields within the academic institutions. This power struggle in the academia and all the prejudice it brought about was well interpreted by Bourdieu (2019) with a set of essays abridged in his book *Homo Academicus* and by Marilena Chauí with the essay “The discontent in the university: the case of the humanities and of the social sciences” in her book *Escritos sobre a universidade* (Chauí, 2001). The problem raised by the Gastaldo and Eakin’s article has profound implications for our understanding of what became of the scientific enterprise in our society in the last 100 years and what it might reserve for the next decades.

One is tempted to look at the problem working with the concept of reification from the lenses of Axel Honneth (cf. Honneth, 2018). Honneth (2018) starts from the original use of the concept by George Lukács who referred to reification as “a cognitive process by which something that does not possess material properties – for instance something with human elements – is treated as something material” (p. 31-32), *i.e.* as a thing. Honneth (2018) pointed out that in this reification it is not clear whether it is a categorical epistemic error, or it is due to morally reprehensible action or even a distorted form of *praxis*. One classic example of reification in Psychology is the misuses of the Intelligence Quotient (IQ) test. Gould (1996) narrated in detail how, in the early 1920s human intelligence was equated with the IQ test turning it into a score, a number, a thing overlooking what a lively intelligent person is and how their intelligent manifestations are strongly linked to culture and context. In fact, the reification of the IQ test started out as a categorical epistemic error when intelligence was reduced to a score in a test to then become a justification for morally reprehensible actions like

using IQ to make racist remarks and dubious interventions to judge people's rights to State' supported social programmes among other social injustices (*cf.* Gould, 1996).

Honneth's reinterpretation of reification was also used by Bracht (2015) in his critical analysis of the process by which Physical Education became a scientific field. Bracht (2015) relying also on other authors, such as Edmund Husserl and M. Merleau-Ponty, asked whether Physical Education has become a victim of reification by treating real and lively bodily practices as an object of investigation (actually reducing them to movement, physical activity, physical exercise). Bracht's analysis is particularly relevant to our understanding of the problem underlying the issue tackled by Gastaldo and Eakin in their article. The unequivocal compromise they assume with Critical Qualitative Research may be understood as a solid and consistent academic stance to avoid the traps of reification in the field of Health. These traps are evident not only when Public Health is driven by epidemiological oriented approaches, but also when researchers use semi-qualitative research with an emphasis on techniques rather than on the epistemic and critical reflective foundations from which these techniques were developed.

However, Gastaldo and Eakin are not interested in delving into the causes and origins of the crisis in the sciences that led to the divide between natural sciences and social sciences, or even between hard and soft sciences. The authors are very pragmatic in this sense. They acknowledge the limitations, they make sure which side they are on, and they set strategies to deal with the negative consequences that scientific investigators must endure by daring to practise qualitative research in Health Sciences, a field dominated by approaches oriented by Natural Sciences. They present strategies to make the practise of soft sciences in the field of Health not only possible, but resilient and, more important, theoretically and methodologically sound, how *hard* can you get in science?

Next, I will comment on four main points. First, some issues about the term Soft in Soft Sciences. Second, the renewal of postgraduate education. Third, critical reflective thinking and the complementarity principle. Four, an *excurso* about the concept of positivism.

2 THE USE OF "SOFT" FOR SOCIAL AND HUMAN SCIENCES IN THE FIELD OF HEALTH

Gastaldo and Eakin's article made the point of using and indeed reinforcing the use of the term of *Soft* Science to emphasize the potential for academic rigour in the conduction of qualitative research. It is indeed a claim of the rightness of the qualitative approach in the investigation in the field of Health, a field in which the biological and biomedicine sciences have the upper hand. I do agree with Gastaldo and Eakin's emphasis to show how a theoretically and methodological sound and rigorous qualitative research is more than appropriate for understanding health with its social and power struggle markers.

Nevertheless, I am concerned with the label *Soft* Sciences. Shapin (2022) made an analysis of the pair Hard and Soft Sciences in which he showed how the

labels do not sound right in other languages such as German, French, Swedish and Danish. In all these languages, “Soft” is particularly troublesome. In French, the correspondent word to “Soft” does not make sense to understand minimally what it might mean in regard to a science done differently than the Hard Sciences. I would say that in Portuguese this is also true. “Soft” in Portuguese is “Mole” which defines something that is weak, lacking in consistency.

I found one mention to the usage of “Soft” in Ribeiro (2003) when he discussed the challenges facing Humanities[1] in the University. Ribeiro remarked that Humanities as Soft Sciences are usually seen as not as scientific like Natural Sciences, though they are in the process to become “Hard” Sciences. Ribeiro’s interpretation of Hard/Soft sciences coincides with Shapin’s (2022) analysis of the origin of the hard/soft distinction. Shapin identified that there is a continuum between “Hard” and “Soft” Sciences, though this array of sciences tended to be understood as stages in which an academic discipline becomes gradually more scientific, i.e. from a “Soft Science” stage to a “Hard Science” stage.

Words and terms are very important in communication, and they do have a life of their own in cultural and historical terms. I think that the case made by Gastaldo and Eakin by stressing the use of Soft Sciences may work in their own academic environment in North America, but it may create a diversion from what they are supposed to mean in non-English language academic cultures. I do agree with the authors in their journey to stress the need for social sciences-oriented investigations in Health Sciences. Indeed, what Gastaldo and Eakin are telling us (as well others have done so in Brasil, *cf.* Carvalho; Gomes; Fraga, 2015) is that it is not possible to tackle health issues treating them in the same way as the Natural and Biological Sciences do, *i.e.* like objects.

What I found particularly important in Gastaldo and Eakin’s article is that Human and Social Sciences entail an understanding not in the pure sense practised by most natural scientists but an interpretation that is built not about human affairs but with human affairs. They do emphasize this essential feature of their “Soft Sciences” approach, and this was particularly well described in a paper that they wrote together with other colleagues when they presented a framework for the evaluation of qualitative research in Health Sciences (*cf.* Webster *et al.,* 2019). In this regard I have two interrelated comments. First, I reckoned this feature to be very similar to Bruner and Connolly’s account of the developmental sciences in which they said “[…] the line between ‘studying’ and ‘changing’ a phenomenon [human development] is indeed obscure.” (Bruner; Connolly, 1974, p. 310). Jerome Bruner and Kevin Connolly[2] were both psychologists with background in biological sciences, even so

1 Ribeiro (2003) discussed the terms Humanities and Human Sciences and how to use them properly. The distinction between the two is very troublesome as Humanities may not refer to scientific disciplines but to classical knowledge in Philosophy and to Literatures and Arts. Human (Social) Sciences would refer to scientific disciplines that are concerned with the investigation of human affairs, like Psychology, Anthropology, Sociology and History. Ribeiro opted to use them indistinctively as he wanted to put forward the notion that Humanities and Human (Social) Sciences are closer to one another than one can imagine. They both share one fundamental aspect that is *the person, the knower, changes in the process of knowing the object*.

2 Jerome Bruner (1915-2016) was an American psychologist best known for his studies on children’s cognitive development in the 1950s and 1960s. He is recognized as one of those responsible for the cognitive revolution

they both acknowledged the paradox that the study of infant and child development entailed *experimental strategies that in a sense created opportunities for babies and young children to unravel hidden competences*. There is a common ground between biological and social sciences that should be explored, particularly in studying development and health. Development and health are examples of processes that cannot be encapsulated by disciplinary frontiers. Second, Shapin (2022) argued the distinction of Hard and Soft Sciences may become futile as long as there is growing recognition that the complexity of problems humanity faces demands a type of competence in interpreting and promoting change in the world that is typical of the social sciences. In Shapin's own words,

> And one reason for that possible recognition is a growing perception that the most valued products and practice of late modernity are *hybrids* of the material and the human, folding together the expertise of the natural and the social sciences, making the distinction between hard sciences and soft sciences harder to see and more pointless to police. (Shapin, 2022, p. 41).

In sum, I think it is important to stress the importance of practising Human and Social Sciences in Health Sciences. The use of the term "Soft" Sciences does not say much at least for Portuguese readers. Indeed, it might confuse matters diverting the attention of the reader to things that are not at all in the centre of the problem that is: health is a human affair with psychological, social and political markers.

3 FROM POSTGRADUATE TRAINING TO POSTGRADUATE EDUCATION IN CRITICAL THINKING AND ACTION

Gastaldo and Eakin pointed out the lack of scientific literacy shown by most researchers regarding qualitative research. I do agree with them, but I believe the problem is more general. The lack of understanding of qualitative research is a symptom of the growing lack of scholarship in all fields. Postgraduate programmes became training programmes for doing research that must be done in two, maximum three years to get a PhD. Students do not have the time to reflect about what is involved in doing science. Max Jammer, German physicist and also a historian of his field said that,

> […] the activity of the modern scientist, more of a technician than a philosopher, is forced to extreme limits by the necessity to digest information accumulating fast in her or his specific field… (researchers) have quite a few opportunities to dedicate to the fundamental problems related to the concepts that they use. (Jammer, 2011, p. 15)

The lack of time and involvement with the study of the fundamental concepts and theories create large gaps in the background of the student and future researcher, the reason why Jammer referred to modern scientist as being more of a technician. It is worth emphasizing that Jammer is talking about researchers in one of the Hard

in Psychology, which until then had been dominated by Behaviourism. His concern with the sociocultural context of development led him to discuss issues related to development-oriented pedagogy and to embark on Culturalist Psychology from the 1990s onwards. Kevin Connolly (1937-2016) was an English psychologist, known for conducting studies on different themes of biology and developmental psychology, ranging from behavioural genetics (in which he was a pioneer) to the ecology of early childhood education, including motor development, in a unique trajectory of approaching the development of human actions.

Sciences *per excellence*: Physics. Furthermore, Jammer is not talking about a scientific illiteracy in regard to qualitative research, but the lack of literacy on fundamental concepts of Physics.

Salles de Oliveira also pointed out that method cannot be confused with techniques. Here is his comment on the methodology of social sciences that easily applies to all sciences:

> It is not difficult to find someone who defines method as set of techniques, but that would mean to operate an enormous reduction in what it can represent. Method does involve techniques that, in turn, must be tuned to what it is meant to address; but, beyond that, it (method) has to do with foundations and processes upon which one reflects (Salles de Oliveira, 2003, p. 21).

Students rarely got to know the classics of their own research theme, and this happens regardless of whether we are talking about the Natural Sciences or the Social Sciences. Although, I am inclined to speculate that it is much more difficult for a student to get away from the classics being in the Social Sciences. In Natural Sciences, one can get reasonably good data if one "hits" the right buttons and can have access to a good script from some application that decodes data[3]. In Human and Social Sciences, the researcher is the main "instrument"[4] with her or his knowledge, feelings and empathy amalgamated by lived experience by researchers and participants in the process.

Gastaldo and Eakin presented a consistent and rigorous framework regarding qualitative research. What they have showed us should be taken seriously and lead to a complete review on how our postgraduate programmes are being conducted in Human and Social Sciences, but also in Natural Sciences. We must give "time to study" a chance in the postgraduate programmes. Indeed, the whole of science needs to rethink how it is being done and maybe consider seriously the need to slow down how we conduct investigations to be able to get more of what science can provide (*cf.* Stengers, 2023).

Maybe it is too much to ask for Gastaldo and Eakin to expand their proposal to teach not only the foundations of critical qualitative research, but the foundations of science in general. They already have many challenges to deal with in their own field. But their article offers us a good opportunity to rethink postgraduate studies turning it into good and sound postgraduate education inspired perhaps on old traditions such as those that we find in the German tradition of *Bildung*[5]. Ribeiro (2001) proposed more than two decades ago that we need to reformulate undergraduate and postgraduate

3 I must clarify that I am not implying that in Natural Sciences suffices to push buttons, quite the contrary. However, as the data collection is usually mediated by instruments that were developed and calibrated by many people, knowing the principles upon which they operate may not be so necessary to handle them.

4 For this reason, the demand to reduce the time students spend in postgraduate studies, as well as to eliminate the Master's degree from this program, faces strong criticism from those involved in the Humanities and Social Sciences. It takes time to achieve theoretical and methodological maturity to conduct ethnographic research, for example.

5 It was from Elenor Kunz that I first heard the reference to this Germanic tradition of training as a reference for reviewing the way studies and guidance are conducted in the Postgraduate Program in Physical Education. He made this comment during his presentation at the Round Table "Postgraduate Program in Physical Education and Teacher Training – Content, methodology and evaluation in professional intervention" during the IV Permanent Forum of Postgraduate Program in Physical Education of the Brazilian College of Sports Sciences held from May 25 to 27, 2011 in Florianópolis, SC.

curricula to forge a *culture for research*, a culture that entails an understanding of the different ways of knowing involving science, philosophy, literature and arts.

On the preface of his book *Acts of meaning*, Jerome Bruner said this best in regard to books, but I think we can generalise Bruner's words to all kinds of academic production:

> Books are like mountaintops jutting out of the sea. Self-contained islands though they may seem, they are upthrusts of an underlying geography that is at once local and, for all that, a part of a universal pattern. And so, while they inevitably reflect a time and a place, they are part of a more general intellectual geography. This book is no exception. (Bruner, 1990, p. ix)

In their quest to enhance students' knowledge on the foundations of what makes a good and sound qualitative research, Gastaldo and Eakin remind us that we all need, regardless of what kind of science we are doing, to work for a better academic education, an education that truly guides and instigates students to dive in into the ocean of knowledge and wisdom, to get to know the underlying intellectual geography.

4 CRITICAL REFLECTIVE THINKING AS KEY TO HUMAN AND SOCIAL SCIENCES MAKE A DIFFERENCE IN THE FIELD OF HEALTH

The core of Gastaldo and Eakin's article is their plea for critical reflective thinking underlying the conduction of Soft Sciences (or Human and Social Sciences) in the study (and intervention) of health. They are radical on their proposal even if they run the risk of not integrating well in the mainstream of the research being conducted in Health Sciences. Although, they acknowledged that they might be elitist on their stance, they argue that it is better to be marginal in regard to the mainstream than run the risk to compromise the core principles behind their understanding on the issues that challenge health, in particular public, social and collective health.

There are echoes of Noam Chomsky ideas in Gastaldo and Eakin's proposal. In 1971, Noam Chomsky delivered the Russell Lectures at the University of Cambridge, UK. In these lectures, Chomsky (1972) laid out two main tasks for every academic: the critical thinking on the empirical principles of human understanding, its challenges and limits (he illustrated this with his own quest about language) and the critical thinking on changing the world to overcome injustices, the huge social inequalities, to denounce private and corporate actions to keep the current *status quo* (he illustrated this with his long fight to denounce the United States actions as an imperialist power). Gastaldo and Eakin, in their own way, are not only talking about a particular preference for a research approach, they are assuming a radical and strong posture with a scientific approach that is critical to the basis and limits of human understanding of health processes and it is also activist to be engaged in social transformation with and by health. Indeed, they made the argument of a qualitative research that focus on the "more transgressive, methodologically self-challenging edges of the field". I do appreciate their stance though it might sound too radical. I can see some parallels between their stance with what is happening in the political and social life in recent years. One of the reasons for the gradual erosion of

welfare state policies to a point close to total eradication in the last 40 years is due to the fact that left and social movements started to make so many concessions to conservative representatives in search of a consensus that they became distorted. In a pivotal turn of events, the radical posture that used to be the hallmark of left and social movements became the trade of right-wing movements and even gave space to the rise of far-right wing movements (*cf.* Stefanoni, 2022[6]). I do not mean to say that Gastaldo and Eakin radical stance is a response to the expansion and success of right-wing movements around the world, but their option for being marginal and transgressive in their research in Health resonates with the current world affairs, though in an opposite and desirable way.

Despite my sympathy for Gastaldo and Eakin's radical stance, I do have to ponder on the possibility of their strategy to hinder scientific alliances throughout the faculty, with researchers from different disciplines and sciences. Science is a collective effort, and a radical stance may fuel intolerance and create obstacles for the necessary dialogue between disciplines, between sciences, hard and soft sciences, natural and social sciences. Before the division of sciences had become field disputes and struggles, it happened as a means to best address fundamental questions, searching for the best concepts and instruments to deal with the diversity of phenomena. I would like to refer to an epistemic principle originally proposed in Physics in the 1930's by the Danish physicist and Nobel Laureate Niels Bohr (1885-1962). The complementarity principle was proposed by Bohr (1961) to deal with the paradox between Classical Mechanics and Particle Physics (which he helped to create) and later known as Quantum Mechanics. Bohr argued that each kind of Mechanics were based in very different epistemic assumptions, Classical Mechanics was deterministic, while Quantum Physics was probabilistic. Although incompatible, Bohr argued that the world Physics is trying to understand is one. If we want to understand it we need to look at it through very different lenses, however, contradictory they might be. Bohr was indeed calling for a tolerant glance from each side. Despite the very distinct forms of viewing the phenomenon, the understanding can benefit from the different, contradictory yet complementary views[7]. Bohr successfully shown that what one called a phenomenon in Physics is always compromised by the conditions and instrumentation used, hence even in physics one cannot talk about a clear distinction between the observer and what is being observed. Bohr soon realized that the implications of the complementarity principle surpassed the frontiers of Physics. In 1938, he gave a keynote speech in the International Congress of Anthropological and Ethnological Sciences in Copenhagen called "Natural Philosophy and Human Cultures" in which he explored the applications of the complementarity principle to approximate Natural and Social Sciences.

6 The same position has been put forward by Vladimir Safatle, Professor of Philosophy at the Universidade de São Paulo, in many talks he has given in the last years when he interpreted the reasons for the success of the far-right movements in Brazil since 2016.

7 We can find a similar approach originating from ethology in the sense of articulating different views for the investigation of the same phenomenon, which was proposed by Niko Tinbergen (1907-1988), a Dutch zoologist, known as "the Four Whys" (Tinbergen, 1963). Tinbergen won the Nobel Prize in Physiology/Medicine in 1973 for this idea and for other contributions of ethology to the understanding of human development.

I believe that we, on the side of Natural Sciences, should work with Gastaldo and Eakin's proposal with the spirit of The Complementarity Principle. There have been attempts to unite the different disciplines over the last hundred years to fight back the growing specializations in the academic disciplines, but in many cases (such as in the Consilience proposal by Edward Wilson, 1998) there was a trend to reduce social sciences to a model based on biological sciences. The complementarity principle does not propose a reduction from one set of disciplines to another. Rather, the principle asks for the importance to acknowledge the differences in epistemic principles and take together the resulting diversity of views to widen our field of view about the phenomena[8]. I do think that Health is one example of a process that warrants different lenses, from Natural Sciences and from Human and Social Sciences. Success in advancing health might be linked to the way that we articulate such different knowledge resulting from each science. Complementarity poses a big challenge for all researchers because each word one uses to conceptualize a given object is a result of linguistic constructions originated from different rationalities. This is particularly critical in the field of Health as has been showed by Ayres (2007) in his analyses of the words "health" and "sickness". Ayres proposes a hermeneutic approach to follow a path towards a more integrative view health-sickness process and to articulate the techno-scientific knowledge with practical knowledge. In Ayres' proposal there is not a causal action on one side, the action of the health professional with their scientific knowledge, and the effect on another side, the consequences in the body of the patient. Rather, the object is in the sharing action of all, health professionals and patients, with their knowledge from diverse rationalities. In fact, Gastaldo and Eakin's proposal are in full agreement with Ayres hermeneutics approach. I emphasized his approach as an example to pave the way for complementarity to work in the field of Health.

Ayres (2007) emphasized the "active presence" of all subjects, health professionals and people being "treated", both sharing their knowledge however diverse they can be. This led me to mention the importance of considering an academic movement, still timid, towards an understanding and attitude of encompassing different ways of knowing that also invite us to practice the complementarity principle. Recently, Ailton Krenak invited university scholars to think from and with ancient wisdom, to exercise and incorporate a different kind of knower: the collective knower (Krenak, 2023). A similar call was made by a group of Brazilian and German researchers working in the fields of Biology and Anthropology about the intersection of academic knowledge and ancient, forgotten, wisdoms (Wulf; Baitello Jr., 2018).

8 In 2011, I was a visiting professor in the Department of Psychology at Lancaster University, Great Britain. There I gave one seminar about the implications of Bohr's Complementarity Principle for the study of action development on the grounds that the developmental phenomena are natural and social processes. A professor of Theoretical Physics from the Physics Department was invited to this seminar. When I asked him about how physicists felt about the complementarity principle, he said that many scholars felt that Bohr was a little unclear about it, in some cases the principle was treated as a kind of esoterism from Bohr because there was no mathematics in it. Later, I realized that Bohr may not have put numbers and equations in the complementarity principle because he might have hindered the dialogue with other sciences, particularly Human and Social Sciences. What Niels Bohr was stressing with his complementarity principle was much more of an attitude of academic tolerance, an exercise of academic empathy and alterity (otherness).

5 *EXCURSUS*: WHAT IS POSITIVISM?

Positivism is usually referred to as a concern made mainly by social scientists about a biased judgement, bias being constrained by, if not determined by prejudice. Gastaldo and Eakin referred to a positivist stance as opposed at their scientific attitude. One way to look at positivism is to see it as a doctrine guided by modern science to fight dogmatic thinking and attitudes. According to the Encyclopedia Britannica, positivism in Western Philosophy refers to "any system that confines itself to the data of experience and excludes *a priori* or metaphysical speculations"[9]. I believe that everybody who believes in science wants to avoid dogmatic thinking and behavior. However, I do recognize that one side effect of positivism is the equivocal conclusion that researchers by being "scientific" are "neutral" in their judgements and actions. As pointed out by Stephen Jay Gould, there is no greater fallacy in the academic profession than this notion of neutrality of scientists. If anything, positivism allows one to know better what one's preferences are, where they stand in regard to the results of experiences and experiments, where they lie with respect to how people are affected by what someone does.

The great mistake regarding positivism has been the assumption that, by being a "positivist", one is free to act without moral judgements, as if a scientific attitude was free of such judgments. From time to time, researchers in their laboratories are faced with moral challenges about whether to continue or stop their investigations because of the anticipated negative consequences the results might induce. These dilemmas haunted many scholars in the last one hundred years from the well know case of the scientists involved in the making of the atomic bomb in the 1940's to more recent ones in regard to the developments of general artificial intelligence and synthetic life.

Auguste Comte (1798-1857) with his account of positivism is source of many of the criticism by human and social scientists. It is obviously biased by rationalistic thinking, and at same time dismisses all that is not empirical, also, from the perspective of the decolonial criticism Comte's view of positivism is very Eurocentric. Nevertheless, one cannot overlook the one great achievement of science overall: the scientific method. A method that gives us a scale to process our experiences and experiments in a way that the results cannot be judged according to what we want to have happened or to have lived. The scientific method is a kind of ruler that does not exempt us from moral judgments, rather it helps us to see where our preferences stand in regard to what we have obtained through our research. The scientific method in the Natural as well as in Human and Social Sciences is a method of accreditation of our own judgments regarding experiences and experiments. What we will do with what has been accredited is a matter of moral values that one of us held dear in our lives.

Some academics might say that Gastaldo and Eakin's proposal is unscientific as they are very critic of positivist science for the field of Health. I think they are grossly wrong. On the contrary, the case they made for Critical Qualitative Research (CQR) is an ontological appraisal of what is involved in Health. Their choice for CQR

9 FEIGL, Herbert. "positivism". **Encyclopedia Britannica**, 17 Jan. 2025. Avaliable in: https://www.britannica.com/topic/positivism. Accessed in: Jan. 14, 2025.

is a result of a moral judgment on what is valuable to do that is balanced on what Edward Said nominated as the four universal values: the search for *truth*, with *reason* and *justice* and with respect for *freedom of expression*. In this sense, Gastaldo and Eakin can be called, as Said (2005) would say, *intellectuals*.

6 FINAL WORDS

I do not intend to propose that Gastaldo and Eakin should review their strategies, my comments were presented more as a record of what their article made me think. I thought about many more things than I was able to process and express here. I am quite fond of their cause to champion critical qualitative research in Health Sciences. My understanding is that their article touches upon an enormous challenge, a challenge that every researcher who wants to make real and good contributions to everyone should reflect upon everyday and it is better expressed in these verses by T. S. Eliot (1888-1965):

> *Where is the Life we have lost in living?*
> *Where is the Wisdom we have lost in knowledge?*
> *Where is the Knowledge we have lost in information?*
> *(Choruses from the Rock, 1934)*

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Resumo: No presente comentário sobre a proposta de Gastaldo e Eakin para a prática das Ciências Moles no campo da Saúde, eu argumento que o rótulo Mole pode não funcionar em campos acadêmicos que não a língua inglesa como nativa no sentido de mostrar a importância das Ciências Humanas e Sociais. Concordo com a ênfase que elas dão ao ensino do pensamento crítico e sugiro uma mudança mais radical no sentido de rever toda pós-graduação de maneira a abarcar conhecimentos e saberes da ciência, filosofia e artes. Finalmente, argumento em favor do princípio da complementaridade como um ponto de partida para articular conhecimentos não apenas de diferentes ciências, Naturais e Sociais, mas também encampar várias formas de conhecer incluindo as sabedorias ancestrais.

Palavras-chave: Ciências da Saúde. Pós-Graduação. Princípio da Complementaridade

Resumen: En este comentario sobre la propuesta de Gastaldo y Eakin para la práctica de las Ciencias Blandas en el campo de la Salud, argumento que la etiqueta Blanda puede no funcionar en campos académicos no angloparlantes en el sentido de mostrar la importancia de las Humanidades y las Ciencias Sociales. Estoy de acuerdo con el énfasis que pone en la enseñanza del pensamiento crítico y sugiero un cambio más radical en el sentido de revisar todos los estudios de posgrado para abarcar el conocimiento y la comprensión de la ciencia, la filosofía y las artes. Finalmente, argumento a favor del principio de complementariedad como punto de partida para articular conocimientos no sólo de diferentes ciencias, Naturales y Sociales, sino abarcando diversas formas de conocer incluyendo la sabiduría ancestral.

Palabras clave: Ciencias de la Salud. Estudios de Posgrado. Principio de Complementariedad

CONFLICT OF INTERESTS

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