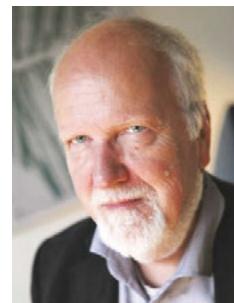


Political Versus Apolitical Epistemologies in Knowledge Organization

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Abstract: Section 1 raises the issue of this article: whether knowledge organization systems (KOS) and knowledge organization processes (KOP) are neutral or political by nature and whether it is a fruitful ideal that they should be neutral. These questions are embedded in the broader issue of scientific and scholarly research methods and their philosophical assumptions: what kinds of methods and what epistemological assumptions lie behind the construction of KOS (and research in general)? Section 2 presents and discusses basic approaches and epistemologies and their status in relation to neutrality. Section 3 offers a specific example from feminist scholarship in order to clearly demonstrate that methodologies that often claim to be or are considered apolitical represent subjectivity disguised as objectivity. It contains four subsections: 3.1 Feminist views on History, 3.2 Psychology, 3.3 Knowledge Organization, and 3.4. Epistemology. Overall, feminist scholarship has argued that methodologies, claiming neutrality but supporting repression of groups of people should be termed epistemological violence and they are opposed to social, critical, and pragmatic epistemologies that reflect the interaction between science and the greater society. Section 4 discusses the relation between the researchers' (and indexers') political attitudes and their paradigms/indexing. Section 5 considers the contested nature of epistemological labels, and Section 6 concludes that the question of whose interest a specific KOS, algorithm, or information system is serving should always be at the forefront in information studies and knowledge organization (KO).

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1.0 Introduction

Neutrality is often considered a positive ideal in relation to knowledge organization (KO) as well as to other issues in library and information science (LIS) and to research in general. Some examples are:

- Szostak (2019, Section 2.1) wrote: "The classificationist need not and should not take sides on theoretical disputes within a field but should rather seek a structure that has a place for any phenomenon identified either theoretically or empirically in the field."¹
- Wikipedia (2019): "All encyclopedic content on Wikipedia must be written from a neutral point of view (NPOV), which means representing fairly, proportion-

ately, and, as far as possible, without editorial bias, all of the significant views that have been published by reliable sources on a topic" (Wikipedia 2019).² (About the non-neutrality of *Encyclopedica Britannica*, see, e.g., the study by Fozooni 2012).

- Huymans and Hillebrink (2008, 16): "The strengths of the [public] library system are its still wide reach, not only as an institution where people can borrow books for recreation and relaxation, but also as a neutral, low-threshold place to visit and to consult content."³
- Andersen, Bazerman and Schneider (2014, 317) wrote: "Scientometric maps provide a kind of description of the cognitive or social structure of a research area independent of subjective judgments and relevance criteria."⁴

- Lewandowski (2015, 278) "people often assume that search can produce right and wrong results. They think that, if a search engine has found the "magic formula," it can provide its users with the best possible results."⁵
- Garfield (1979, 3) "In other words, the citation is a precise, unambiguous representation of a subject that requires no interpretation and is immune to changes in terminology"⁶
- The term "democratic indexing" may indicate a belief in the neutrality of folksonomies.⁷
- *The Times Comprehensive Atlas of the World* (2014, 42): "Maps are still regarded by many people as dispassionate representations of the external world."⁸

Is it possible to question such ideals of neutral knowledge and neutral communication? Is the ideal of neutrality not so deeply rooted a goal in science as well as in cultural institutions such as libraries, knowledge organization systems (KOS) such as library classifications, and in scientific taxonomies? The question about the neutrality versus partisanship of knowledge is extremely important both in general and for KO. Both points of view are extremely dangerous. It is dangerous to be naïve and to accept knowledge claims uncritically, just as it is dangerous to deny any possibility of coming closer to the truth by critically examining arguments and evidence (as seems to be the case, for example, in the wave of "fake news" associated with the campaign of President Donald Trump).

In order to consider this, we have to consider, among other things, the methods on which claimed neutrality have been obtained. Such methods are again based on epistemological assumptions.

2.0 Approaches to knowledge organization and their epistemological bases

The term epistemology⁹ can be understood in a narrow and broad sense (Falmagne 2014, 597):

As an academic field, epistemology is the study of how knowledge is defined and attained. More broadly, the epistemology of a society or a group is the conception of knowledge that guides its social practices.

We can add that a person's epistemological beliefs are her beliefs about knowledge that guide her actions; all our thinking and acting activities are formed by assumptions that basically are related to issues concerning knowledge, for example, who—and what kinds of arguments—we should believe and whether knowledge is neutral or political. Our personal epistemology is formed by our socialization into different cultures and social groups. We may learn in school or at the university that something is objective sci-

entific knowledge, we may learn methodological knowledge about norms for doing research, or we may learn in a social group that specific knowledge claims represent an ideological point of view, which does not serve our interests, but on the contrary, they should be considered harmful to us.

There are interactions between the following levels:

- Actions of some kinds
- Assumptions, views, theories, and ideologies supporting or counteracting these actions.
- Epistemologies supporting or counteracting ways to get knowledge and to verify or falsify assumptions, views, theories, and ideologies.
- Using tools such as documents, media, people, universities, libraries, and KOS, which are all influenced by views, theories, ideologies, which in different ways are supporting or counteracting action goals.

Epistemology is a part of philosophy, but it develops in parallel with both science and other cultural phenomena. Albert Einstein, Niels Bohr, and Thomas Kuhn were among the scientists who contributed to epistemology in the twentieth century, but so did the feminist movement, as we shall see below. We cannot do without philosophy, but we cannot just leave epistemology to the philosophers. No scientific argument can be complete if it does not include epistemological arguments, and the same can be said about political arguments, e.g., feminist argument for equality. The quality of a given KOS also depends on how it has been constructed and, in the end, needs to include epistemological arguments. Therefore, we cannot just leave epistemology and epistemological discussions to the journals of philosophy, but we need to include them in our own discourses.

In relation to KO, it is important to consider that questions related to epistemology and neutrality are important on two levels.

- Level 1: The knowledge claims, concepts, and documents to be classified/organized have been produced by people influenced by certain views (e.g., a positivist view that data speak for themselves and that the documents, therefore, do not represent a certain view—or the opposite: an explicit declared position, e.g. standpoint epistemology—to be presented later).
- Level 2: When the documents are classified, the classification may be based on a positivist assumption that the classification is neutral (or that it is slanted, i.e., the opposite).¹⁰ This is independent of whether we speak of computer-based or human-based classification, because computer-based classification is based on choices made by the programmer. It is also a mistake to believe that the epistemology of classification should correspond to the epistemology of the documents being organized.¹¹

At both levels, conflicting views are always at play. There are, for example, claims of neutrality or partisanship in methodologies applied in natural science, in social science, and humanity as well as in KO. In other words, even if KO researchers accept that different domains have been influenced by different paradigms and ideologies, they may claim that their own methods of organizing such knowledge (e.g., logical analysis or statistical methods or Wikipedia's NPOV) are neutral and providing an objective picture of that domain. Others may claim, however, that such methods cannot be neutral, but that they always depend on methodological choices made by the investigator, whether they are made consciously or unconsciously, explicit or implicit (see, for example, a discussion about the non-neutralities of informetric methods in Hjørland 2016a and another discussion about claimed atheoretical methods of classification in Hjørland 2016b).

2.1 Consensus as a methodology for classification?

Considering KOS, what methods are used for their construction? Sometimes, no methods seem to be used. For example, Leydesdorff (2006, 602) wrote: "The Institute of Scientific Information (ISI) itself provides a classification of journals at the level of the database that has been based on intuitive criteria (Pudovkin and Garfield, 2002)."¹² This is not very different from how many libraries—even prominent research libraries—have developed KOS (and afterwards assigned documents to classes in KOS). This have mostly been done by subject specialists, it seems with the implicit assumption that a subject specialist (any subject specialist?) know how to classify the domain in which she is educated. This assumption seems, however, to conflict with Broadfield (1946, 69-70),¹³ who wrote:

Consensus is most likely to appear among the unenlightened, of whom it is characteristic to be unanimous on the truth of what is false. In intellectual matters agreement is rare, especially in live issue.

If there is no consensus in a field of knowledge, then the choice made by a subject specialist cannot be neutral but must choose among alternative ways of classifying the domain. If such choices are not argued, the classifier makes decisions of consequences for the users without making clear in what way the users will be affected by the decisions.

The American library researcher, Henry E. Bliss, who worked at the same time as Broadfield, constructed a classification system, *Bibliographic Classification*, based on the idea of consensus. He thought: 1) that consensus is the most important criterion for the construction of a classification; and, 2) that he himself could identify the consensus by studying the available knowledge in all domains. Bliss' claims conflict

with Broadfield's view, and if the last is correct, the consensus that Bliss thought he found may turn out to be just his own subjective interpretation based on his worldview and assumptions. Consensus may be ideologically harmful, as can be seen in women's fight for equality to be presented below (where traditional, male dominated research, tended to agree on knowledge claims harmful for women), but that is not to say that consensus is unimportant for KO.

We shall not in this article go further into the literature about consensus but just mention that it is briefly discussed by Solomon (2015, 253), who wrote:

Consensus conferences are not generally useful in science. When scientists disagree, they typically engage in further research; they do not call a consensus conference, sit around a table, and talk for three days.

At the bottom, we have to consider the research processes and the social processes and their underlying assumptions in order to evaluate knowledge claims. Statements about classification are also theoretical claims (e.g., claims of the form "X is a kind of Y").¹⁴ It is not a question of how many people support a given claim but the research and arguments that have led to it. And in the examination of this, the methodologies, assumptions, worldviews, and epistemologies are important to consider.

2.2 Basic methodologies and epistemologies

Hjørland (2013b) examined different methodologies for classification and knowledge organization (KO): computer based and human based classification (Section 4.1), user-based and cognitive classifications (Section 4.2), faceted classifications (Section 4.3), numeric taxonomic approaches (Section 4.4), bibliometric classifications (Section 4.5), and domain-analytic classification (Section 4.6). The article concluded that these approaches and traditions are again connected to theories of knowledge (or epistemological views). The basic epistemological positions discussed are empiricism, rationalism, historicism, or pragmatism (see also Hjørland 2017, §42c, 106-10). Each of these positions will be briefly introduced below. Section 2.2.1 presents empiricism, 2.2.2 rationalism, 2.2.3 empiricism and rationalism combined, 2.2.4 historicism with hermeneutics, 2.2.5 pragmatism with critical theory, and 2.2.5.1 social constructivism. In Section 3, feminist epistemology, a special version of pragmatism, will be unfolded.

During the Enlightenment, two conflicting theories of knowledge were dominating: empiricism and rationalism, where empiricism stresses the importance of observations, while rationalism stresses the role of rational thinking. Each of these two positions had very strong arguments in its favor (see 2.2.1 and 2.2.2).

Empiricism and rationalism are individual epistemologies whereas historicism and pragmatism are social epistemologies. What does this mean? Solomon (2015, 250) interpreted individual epistemology to be an individual's own examinations of the strength of arguments and evidence, whereas social epistemology is the reliance on expertise, authorities, peer-review, and so on. However, a better expression for what Solomon here called "social epistemology" is what Patrick Wilson (1983) termed "second-hand knowledge." She found that individual epistemology "has its roots in Descartes's strategy of beginning with firm foundations and carefully reasoning to logical conclusions. It is particularly suitable for mathematical claims, philosophical argumentation, and some everyday empirical knowledge, but it is less so for scientific knowledge." This interpretation of social epistemology seems, however, too narrow. Another way to define the difference between individual and social epistemologies is by saying that individual epistemologies (empiricism and rationalism) assumes that individual perception and cognition takes place in an organism that is unaffected by social and cultural norms, and that the produced knowledge is (or should be) independent of subjective judgments (that the data speaks for themselves). Although this view is obviously problematic, it nonetheless represents a widespread assumption, at least implicitly. In practice, it is probably the dominant view even today. However, what followed in the ground swell of Thomas Kuhn (1962) was the idea that the observations of researchers are theory laden and socio-culturally influenced. This means that even when you are alone, your thinking is social, because you cannot think without the concepts that you have learned in a given socio-cultural context. Therefore, in contrast to Solomon (2015), there is no such thing as thinking free of social and cultural norms and issues, and therefore, it cannot be good enough "for mathematical claims, philosophical argumentation, and some everyday empirical knowledge." (In practice, however, this understanding is also present in Solomon's article, as she considers how researchers may be influenced by "hot cognition" (cognition biased by emotions), ideologies, and related phenomena).

2.2.1 Empiricism

This family of approaches is based on the idea that all knowledge exclusively or dominantly comes from the senses. The methodology of science should be about how to observe and how to report observations, and it is possible to make observations in ways that eliminate the subjectivity of the observer. Empiricism has the obvious argument that in order to study any phenomena in the world (say birds) you must observe them (pure speculation cannot tell you much about the world). The position considers itself apolitical. Two main problems of empiricism are: 1) observations are

necessarily singular and, therefore, induction from a limited amount of observations to a general conclusion is necessary (but subject to Hume's famous criticism of induction);¹⁵ and, 2) the selection and description of observations must be done a-theoretically and a-politically in order to live up to the principles of empiricism, but this is considered impossible from the point of view of other positions such as pragmatism. Nickles (2005a) wrote "In the twenty-first century, nearly everyone is an empiricist in the everyday sense of taking experience seriously as a basis for knowledge claims about the natural world and human behavior, but most philosophers reject traditional, doctrinaire empiricism—the view that human sense experience provides a special connection of the knowing mind to the world and thus provides a foundation on which knowledge can build, step by step." Nickles listed a range of challenges that changed or ousted classical empiricism.¹⁶

In relation to KO, Hjørland (2011, 74) wrote:

Empiricist theories of indexing are based on the idea that similar (informational) objects share a large number of properties. Objects may be classified according to those properties, but this should be based on neutral criteria, not on the selection of properties from theoretical points of view because this introduces a kind of subjective criteria, which is not approved by empiricism. Numerical statistical procedures are based on empiricist philosophy.

In knowledge organization, numerical taxonomy (see Montoya, in press) can be understood as based on radical empiricism.

2.2.2 Rationalism

This family of approaches is based on the idea that all knowledge exclusively or dominantly must be deduced from basic principles (like logic and mathematics). The classical example put forward by rationalists is geometry, which is a science that is not based on observations but seemingly of pure reason. Against empiricism, rationalism has some important strongholds: 1) you cannot observe anything (even a simple thing like "this object is red")¹⁷ without relying on concepts and categories that do not come from experience; and, 2) if empiricism claims that all knowledge in the world comes from experience, how do they know this? If they base this claim on experiences, they may someday make a conflicting observation and thus be wrong. And, say the rationalist triumphant; if you have not experienced it, it must come from basic rationalist principles—and, therefore, it is a self-contradictory claim. Rationalism assumes that basic principles of reason are ahistorical and apolitical and based on a fundament of evidential truths. Although

many epistemologists today consider rationalism a dead position,¹⁸ it became important in the so-called cognitive revolution in the twentieth century (inspired by the computer and information theory), and many approaches to classification and KO must be classified as rationalist (by contrast to the other three basic epistemologies by not having developed methodologies based on empirical data, historical analyses, or pragmatic analyses).

In relation to KO, logical division (Frické 2016) and facet analysis (Hjørland 2013a) are approaches that primarily are based on rationalism. Hjørland (2011, 74) wrote:

Rationalist theories of indexing (such as Ranganathan's theory) suggest that subjects are constructed logically from a fundamental set of categories. The basic method of subject analysis is then "analytic-synthetic," to isolate a set of basic categories (=analysis) and then to construct the subject of any given document by combining those categories according to some rules (=synthesis). The application of rules such as logical division is by principle part of the rationalist view.

2.2.3 Empiricism and rationalism combined

Positivism,¹⁹ in particular logical positivism, is a family of views, which can be understood as a combination of empiricism and rationalism (explicit in the label "logical empiricism"). According to Smith (1986, 64):

logical positivism arose as the joint product of two intellectual traditions that conflicted deeply with one another: In attempting to unite these traditions, its adherents created an extremely influential approach to philosophy but one that embodied serious intellectual tensions from its dual ancestry.

Empiricism and rationalism are both based on "objectivist"²⁰ norms, and thus their combination is also a position subscribing to the apolitical ideal. They may also be termed "foundationalist" by assuming that all knowledge in the end has a secure basis in either observation, reason, or a combination.²¹ Positivism as this term is used today does not consider itself a political position (see also Moita-Lopes 2012).²²

Empiricism and rationalism are still important epistemologies in the sense that much research in all domains of knowledge can be understood as dominated by respectively empiricist and rationalist norms (or a combination of them). Even today, philosophers sometimes seem to consider empiricism and rationalism as the only possible alternatives (see, e.g., Markie 2017). However, following Enlightenment, historicism came to problematize both empiricism and rationalism (cf., Section 2.2.4).

In relation to knowledge organization, Desale and Kumbhar (2017) developed a *Methodology to Develop Depth Classification Scheme for Physics* based on facet-analytic theory that clearly also included an empirical methodology (a seldom example of a clear combination of empiricism and rationalism in LIS). What is missing here from the hermeneutic and pragmatic perspective is a considering of physics as a domain. There are many references in their book but very few about physics and no attempt to discuss conceptualizations of this domain. The methodology proposed implicitly implies that if you know the literature of LIS, you do not need to know anything about the domain you are classifying. Of the same reason, the proposed methodology appears as neutral.

2.2.4 Historicism with hermeneutics

Following Enlightenment, historicism came to problematize both empiricism and rationalism. What was previously understood by rationalists as eternal principles of reason and beauty now became understood as just historically developed categories. In the same way the empiricist view of the universal individual observer changed to a view of the observer as culturally formed and of observations as theory laden. However, this historicist view was not considered part of main-stream philosophy of science for a long time, but it got major impact when Kuhn (1962) published *The Structure of Scientific Revolutions*. The historicist position is related to hermeneutics but has also influenced social constructivism²³ and other traditions and is today gaining ground in social epistemology.²⁴

Hoyningen-Huene and Lohse (2015, 136) wrote why a combination of empiricism and rationalism is insufficient according to Kuhn's theory:

A sixth consequence of Kuhn's theory is the abolishment of the idea that science is determined by logic and observational data alone, or by the scientific method, as construed as a set of rigorous rules. This idea has dominated the understanding of modern science from its very beginning. According to Kuhn, however, exemplary problem solutions guide scientific research in its normal phase. Their cognitive potential for research is not exploited by explicit (or fully explicable) rules, but rather by implicit analogies. New problems are identified in the light of solved ones, and new solutions are judged as legitimate in a similar manner.

With the Kuhnian revolution in the philosophy of science, social epistemology became important (cf., Wray 2011). This family of approaches consider knowledge developed in a so-

cial and cultural perspective (and thus opposed to the individualism of empiricism, rationalism, and their combination in logical empiricism/-positivism). Historicism emphasizes the perspective of the traditions in which knowledge develops and the understanding of both the observers' individual perception and their cognition as formed by historically developed frameworks or paradigms. The historically oriented researcher, therefore, puts relatively more emphasis on the study and comparison of different theories and concepts in their contextual embeddedness. Whereas historically-oriented researchers often also are pragmatic in their orientation, this is not always the case; some historicist-oriented researchers may consider themselves and knowledge in general as being neutral or apolitical.

In the ground swell of Kuhn's (1962) book *the Structure of Scientific Revolutions*, the problem of the theory-laden nature of observations has come to the foreground of epistemology and the philosophy of science. This means that researchers in different paradigms or traditions may see the world differently. There can be no observational facts that can say whether one or another theory is correct, because observational facts are themselves a part of a paradigmatic framework. Although this view is relatively new in the philosophy of science,²⁵ it has for a long time been recognized by hermeneutics.²⁶ According to Mallery, Hurwitz, and Duffy (1992), the notion of a paradigm-centered scientific community is analogous to Gadamer's notion of a linguistically encoded social tradition. The same point is also mentioned by Hoyningen-Huene and Lohse (2015, 136).²⁷ Therefore, what Kuhn brought to the philosophy of science has been interpreted as a hermeneutical view of science.²⁸

In relation to KO, Hjørland (2011, 74) wrote:

Hermeneutical theories of indexing suggest that the subject of a given document is relative to a given discourse or domain and is why the indexing should reflect the need of a particular discourse or domain. According to hermeneutics, a document is always written and interpreted from a particular horizon [note omitted]. The same is the case with systems of knowledge organization and with all users searching such systems. Any question put to such a system is put from a particular horizon. All those horizons may be more or less in consensus or in conflict. To index a document is to try to contribute to the retrieval of "relevant" documents by knowing about those different horizons.

2.2.5 Pragmatism²⁹ with critical theory

This family of approaches shares the historicist/hermeneutical view of the socio-cultural nature of knowledge but emphasizes more strongly the role of goals, values, ethics, con-

sequences, and interests^[30] and is, therefore, the only epistemologies that take an explicit political or ethical dimension as a part of their foundation.³¹ Pragmatism was inspired by Darwin's theory of evolution in which the senses and cognition of animals are understood as tools for the adaptation of the species to its ecological niche.³² Knowledge is what supports practices, and practice, therefore, is also the final criterion of what constitutes knowledge. Pragmatic theories include, for example, classical American pragmatism, neopragmatism, feminist epistemology, Marxist philosophy of science,³³ and critical theory.³⁴ In Section 4, we shall consider whether or not the goals, values, and interests of the individual researchers correspond with the, often implicit, interests their research supports. The pragmatic/critical group of epistemological theories claim that the neutrality of empiricism, rationalism, and positivism is illusory and wrong, that all research has political implications and the norm of neutrality is, therefore, based on problematic premises leading to wrong conclusions. It is also characteristic of the pragmatic/critical theory that the issue of the social conditions of creating knowledge is seen as important. Therefore, the relation between science and society becomes central. There is in this group different views concerning natural science, where some believe this domain to be an exception from the claim that knowledge cannot be neutral. The inclusion of natural science as interest-driven or political is perhaps most well-known from some traditions of social constructivism to which we will, therefore, have a digression before returning to pragmatism.

2.2.5.1 Social constructivism

Concerning the social constructivist view of natural science as interest-driven or political see, for example, the *Big Dipper* (Goodman 1978, Donato-Rodríguez 2009), *Statistical Outliers* (Lovie and Lovie 1998), *Quarks* (Pickering 1984, see also Boghossian 2001).³⁵

Hacking (1999, 6-7) wrote about social construction:

Social construction work is critical of the status quo.
Social constructionist about X tend to hold that:

- (1) X need not have existed, or need not be at all as it is. X, or X as it is at present, is not determined by the nature of things; it is not inevitable.

Very often they go further, and urge that:

- (2) X is quite bad as it is.
- (3) We would be much better off if X were done away with, or at least radically transformed.

A thesis of type (1) is the starting point: the existence or character of X is not determined by the nature of things. X is not inevitable. X was brought into existence or shaped by social events, forces, history, all of which could well have been different ... most people

who use the social construction idea enthusiastically want to criticize, change, or destroy some X that they dislike in the established order of things.

It is important to emphasize that social constructionism is controversial. Kuhn (2000, 110) famously rejected the “strong programme” as “deconstruction gone mad,” and Boghossian (2001) made a very concise and clear exposition of the arguments against many of its claims and concludes (8):

At its best—as in the work of Beauvoir and Appiah—social constructionist thought exposes the contingency of those of our social practices that we have wrongly come to regard as inevitable. It does so by relying on the standards of good scientific reasoning. It goes astray when it aspires to become either a general metaphysics or a general theory of knowledge. As the former, it quickly degenerates into an impossible form of idealism. As the latter, it assumes its place in a long history of problematic attempts to relativize the notion of rationality. It has nothing new to add to these historically discredited views.

It is, therefore, important, in the words of Smith (1996, 3) “to steer a path between the Scylla of naive realism and the Charybdis of pure constructivism.” It is ironic that social constructivism—which tends to regard positivism as its enemy par excellence—itself seems to be based on the same problematic assumptions about the neutrality of themselves as researchers. Therefore, (strong) social constructivism is not an alternative to positivism.

2.2.6 Returning to pragmatism

Because of the critical issues raised against social constructionism, there is a need of alternatives. Among names for such candidates are pragmatism and critical theory but also feminist epistemology, standpoint epistemology, and social epistemology.

For many people, it is a surprising “upside-down” interpretation to consider, for example, positivist research as subjective and only having “soft objectivity,” whereas forms of pragmatism such as feminist research is based on “hard objectivity.” To most people “hard science,” as well as empiricism and positivism are understood as based on objective, a-political principles, whereas feminism and critical theory is understood as political activities based on subjective principles. However, the argumentation here is that if an epistemological view leads to wrong results, it does not provide objectivity. For example, if it is true that the general intelligence of women is equal to that of men (as discussed below in Section 3.2), then the methodologies leading to a

false conclusion are problematic, and so are they associated epistemologies. The fight for truth is, therefore, also a fight involving scholarly methodologies and epistemologies. The feminist epistemologist Sandra Harding (2005) claims that starting research from the lives of women strengthens standards of objectivity and that such “strong objectivity” can be contrasted with the “weak objectivity” of supposed value-neutral research since strong objectivity takes into consideration researcher bias, something that Harding argues can never really be removed; a researcher’s life experiences will always be a lens through which they view the world and subsequently their research.

In relation to KO, Hjørland (2011, 74) wrote:

Pragmatic and critical theories of indexing are in agreement with the historicist point of view that subjects are relative to specific discourses but emphasize that subject analysis should support given goals and values and should consider the consequences of indexing. These theories emphasize that indexing cannot be neutral and that it is a wrong goal to try to index in a neutral way. Indexing is an act (and computer-based indexing is acting according to the programmer’s potentials and intentions). Acts serve human goals. Libraries and information services [and classifications] also serve human goals, and this is why their indexing should be done in a way that supports these purposes.

Now we will turn to feminist theory in order to illuminate how the claimed neutrality of research can be shown to represent subjective views disguised as objective science.

3.0 An example: the feminist point of view in history, psychology, knowledge organization, and epistemology

Women have had to struggle, for example, to win the right to vote, to stand for election to parliament, to be accepted at universities, and to be accepted for many kinds of jobs. Such steps towards equality did not come by themselves and were not given to them by kind men (although some men helped them, and some women fought against them). Many such steps were won by hard struggle and sometimes at the risk of their life. This fight also has an ideological side: the views that the biology of women make them unfit to vote and unfit for many positions in society. We can say that such views represent theories about women, and that epistemology is about how such theories should be verified or falsified, accepted or dismissed.

Four academic disciplines: history, psychology, knowledge organization, and epistemology, among others, seem in the past to have supported men’s privileges ideologically and thereby to have counteracted women’s fight for equal-

ity. Feminist oriented scholars (women and men) may have argued against such theories about women but may have been confronted with a second order challenge: that they were not properly scientific, because an epistemological ideology claims that scientists and scholars must be detached from the topic of research they study, that it is against the objectivist norms to be engaged on one side of a battle, i.e., that partisanship is incompatible with obtaining objective knowledge. It has even been the case that academic norms supported political conservatism and that the selection and reward system of academia supported a narrow ideological point of view (see, e.g., Novick 1988, 61ff). The view that feminist arguments (among others) should be dismissed as not properly scientific has been termed by opponents as “epistemological violence” (Teo 2014), thus linking epistemology with ethics.³⁶ Our example is thus:

- Women have had to strive very hard to obtain what we (in the western democracies at the least) today consider to be their obvious and fundamental rights.
- At a second level they had to strive against theories and ideologies that counteracted their fight for equal rights (this battle is not fully won today as the example from psychology below shows).
- At a third level, they had to strive against epistemologies that supported the theories and made it difficult to argue against those theories (and for example, having problems making their arguments heard in academia). In this process they have fought against certain epistemological positions, defended other positions, and developed their own epistemological positions, for example “standpoint epistemology” (Harding 2015) (This epistemological battle also is not fully won today, and epistemologies seems in general to be in a state of confusion).
- Libraries, information systems, and knowledge organization systems have tended to reinforce the dominant ideologies and epistemologies and thereby also to be a field for feminist battles.

Let us, therefore, start by looking at some epistemological issues of “scientific”³⁷ history, “scientific” psychology, knowledge organization (KO), and epistemology itself from the point of view of feminist criticism.

3.1 History

Peter Novick’s book (1988) *That Noble Dream. The ‘Objectivity Question’ and the American Historical Profession* is about how history became a science in the USA in the 1880s³⁸ (from being an unacademic writing activity about the past, mostly with clear political purposes and from avocation into a professional field) based on a certain view of objectivity and

the way to do proper historical research. During the history of the field, the idea of objectivity was elaborated, modified, challenged, and defended, and this is what this book is about. Novick (1988, 37; emphasis original) wrote about the epistemology of the new historical university discipline:

This, then, was the model of scientific method [that of physics in the 1880s] which, in principle, the historians embraced. Science must be rigidly factual and empirical, shunting hypothesis; the scientific venture was scrupulously neutral on larger questions of end and meaning; and, if systematically pursued, it might ultimately produce a comprehensive, ‘definitive’ history. It was in the light of this conception of *wissenschaftliche Objektivität* that they regarded themselves as loyal followers of Ranke ... Historical construction has ... to be performed with an incoherent mass of minute facts, with detailed knowledge reduced as it were to a powder.

And (38-9):

... the simple but arduous task of the historian was to collect facts, view them objectively, and arrange them as the facts themselves demanded.

An important idea was that history was making bricks without much idea of how they should be used by the architects to build a grand synthesis, history. Novick (1988, 56):

This conception of the historian’s task—the patient manufacture of four-square factualist bricks to be fitted together in the ultimate objective history—had enormous professional advantages. It offered an almost tangible image of steady, cumulative progress. Although creating a grand synthesis might require an architectonic vision, almost anyone, properly trained, could mold a brick.

Implicitly, it is here said that it makes no difference whether you are a man or a women, a white or a black, from the lower, middle or higher class, Protestant or Catholic, northern or southern American, etc, the personality and subjectivity of the researcher can be disregarded as long as the historian masters the proper training in source criticism and other historical methods.

One of the characteristics of the scientific image described by Novick (1988, 76-77) was the need for scientific agreement or consensus among professional historians, and “to strike a posture of impartiality, fairness, detachment, and objectivity.” Novick (1988, 469) wrote that when history was established as a scholarly discipline in the United States, “universalism” was assumed, i.e., that,

Truth was one, the same for all people. It was, in principle, accessible to all and addressed to all. Particular commitments—national, regional, ethnic, religious, ideological—were seen as enemies of objective truth ... The close connection which historians saw between detachment and objectivity made them sympathetic to Mannheim's celebration of the vantage point of free-floating and socially detached observers, whose liberation from particularist loyalties allowed them to approach closer to objectivity.

However, this universalism was later challenged (Novick, 1988, 470; emphasis in original):

The entry of large numbers of Jews into the upper reaches of the [historical] profession in the 1950s and early 1960s was widely seen as the fulfillment of universalist norms. It was otherwise with the arrival of blacks and women from the late sixties and onward. For their rise to prominence within the profession coincided with a new, assertive, particularist consciousness which both directly and indirectly challenged universalist norms. They defined themselves not as "historians who happened to be Negroes," with a consensually acceptable integrationist standpoint, but as *black* historians, committed to one or another form of cultural nationalism; not "historians who happened to be women," seeking proportional representation in textbooks for members of their sex, but *feminist* historians with an overriding loyalty to their sisters, and agendas which called for a thoroughgoing transformation of historical consciousness. Jews, upon entering the profession, had insisted that they were "just like everyone else, except more so," committed to a sensibility which was not just integrationist but usually assimilationist as well. In a different cultural climate the new black and female entrants stressed the distinctiveness of their vision, and often were highly critical of central values of the profession"

This example illuminates that the new American historical discipline in 1880s was founded by assumptions, some of which were later questioned by, for example, feminist historians.

3.2 Psychology

Intelligence and intelligence testing are contested concepts in psychology. Nyborg (2005) is an article about sex differences in general intelligence (g),³⁹ that concluded:

Proper methodology identifies a male advantage in g that increases exponentially at higher levels, relates to

brain size, and explains, at least in part, the universal male dominance in society.

It is evident that feminists may have problems accepting this conclusion.⁴⁰ Nyborg's research is, however, supported by much empirical research by Nyborg and other researchers, which is published in scholarly journals. Can we question its truth? If so, how can we do so?

A well-known thesis by feminist researchers is that it is wrong to conclude that women cannot be great scientists based on statistical historical research. The case has been that women in the past have not been given the opportunities to develop their talents. In many societies, their conditions have been almost like slaves. Therefore, studies of women's intelligence, their possibilities contributing to art and science and their possibility for status in societies, cannot just be based on an empirical pattern itself but must be based on a critical interpretation of this pattern by considering the conditions offered to women in society. Flynn and Rossi-Case (2011) studied samples from five different countries using the intelligence test Raven's Progressive Matrices. By using samples from countries in which women have equal academic education they concluded that females matched males both below and above the age of fourteen. This counts against hypotheses that genetic factors cause general intelligence differences⁴¹ between the genders and the evidence unfriendly to gender parity at mature ages found in psychological research is in their opinion based on suspect samples. We see again that epistemological issues are important for how research is done and the conclusions reached.

3.3 Knowledge organization (KO)

The feminist scholars of knowledge organization, Olson and Fox (2010, 304), wrote about libraries and knowledge organization systems:

Just as intellectuals do, librarians serve as „custodians of culture" and have the power through collection development, cataloging, and programming not just to mirror, but to unintentionally or intentionally shape culture in the communities in which the library exists. Also, those ideologies that reflect a masculine-focused, mainstream-reinforcing voice should be identified for what they are, rather than as a representation of the norm ...

The tools of librarianship reinforce the cultural agenda or ideology. Consulting selection lists, purchasing works that have already been filtered through the publishing process, organizing, displaying and eventually weeding them constitute value judgments that reveal the agenda of the library. The subject representation work of catalogers, standards developers, and bibli-

graphic utilities shape ideology by naming topics and placing them in a hierarchy, thus asserting value and adding connotative baggage. The collection, cataloging standards, LCSH, scope notes, reading recommendation lists, bibliographies, programming, pathfinders, Web portals, and any other texts that carry the discourses of the library are the literature that results in the formation of cultural ideology.

Along the same lines, Samuelsen (2008) deals with the KO of feminist research in bibliographic catalogues and in a Swedish context. She analyzes two universal knowledge organization systems, *Svenska ämnesord* and *Klassifikationssystem för svenska bibliotek*, and one subject-specific system, *Kvinnohistoriska samlingarnas ämnesord* in order to discuss the extent to which they can articulate feminist perspectives. She found that the two universal systems studied tend to marginalize feminist perspectives as forms of knowledge. Samuelsen interprets this marginalization in the light of these systems' putative objectivistic and universalistic epistemology and ontology. It is suggested that they privilege disciplinary knowledge over interdisciplinary knowledge forms and substantive topics over conceptual perspectives. Guidelines for knowledge organization tend to encourage indexers and classifiers to search for central substantive themes. In this schema, feminism is understood as a field relating to socio-political women's issues. Feminist knowledge qua knowledge is marginalized by the systems studied, and at times is given a plain wrong classification. Further, Samuelsen suggests that the subject-specific knowledge organization system *Kvinnohistoriska samlingarnas ämnesord* is only able to deal with feminist research in an incomplete and inadequate way. Although this index is designed to classify texts within the broad subject field of women's studies, masculinity studies, and gender research, as well as other material relevant to the field, the structure of the index is too simple and does not allow for associative relationships between terms nor does it define feminist discourse. The premises and guidelines for knowledge organization practice are also under-developed or not well defined. Successful organization of feminist knowledge needs instead to be based on an understanding of knowledge and knowledge organization as contextually shaped (and shaping). Feminist literature is first and foremost about expressing feminist discourse qua theme, perspective, and part of the feminist tradition (such as critical, women-centric, and reflexive feminisms)—an observation that needs to be reflected in the knowledge organization.

Olson's (2002) book, titled *The Power to Name: Locating the Limits of Subject Representation in Libraries*, states already in the title a very important principle: that subject descriptions are not neutral, and that it is associated with the power to be able to name, describe, and classify documents.

The last feminist position to be discussed in this section is Feinberg (2018). This is an article reflecting on the 2017 protest slogan "librarians for facts" (in the wave of "fake news" associated with the campaign of president Donald Trump). Feinberg asks: "what does this slogan really mean?" And what are the implications for (teaching) information access? Examining this goes into the issue of neutrality and argues—like the present author—that neutrality can be a problematic standpoint. These perspectives Feinberg relates to issues about library catalogs and metadata.

Feinberg emphasis (677) "my goal is methodological, not topical;" however, on the other hand, she also claims "I can only speak for myself." This seems, however, somewhat unclear; are theoretical and methodological papers not assumed to provide principles that we all should share and work for? Should methodologies and epistemologies be purely personal? When Feinberg becomes concrete, the suggestions seem paradoxical (679): "So here is what I'm for: information access that is uncomfortable and difficult." (Such a conclusion seems disappointing in relation to her point of departure: what to teach librarians in relation to information access in the wave of "fake news"). It should be said, however, that I agree with some premises behind Feinberg's suggestion: that the easy solutions of search engines like Google have taken the control over the search away from the user, in contrast to searching classical databases (cf., Hjørland 2015). Despite this, a paper should not conclude this way—of course it cannot be a goal to make things uncomfortable and difficult.⁴²

Concerning science, Feinberg wrote (677) "science is objective in the same way that Fox News is objective: It is a group of people endorsing a certain set of evidential standards as being appropriate for certain purposes." While my own argument has been that science can be subjectivity disguised as objectivity, I must object to this statement, which is followed by this sentence (emphasis original): "If we are for science, it is not because science 'is facts'; it is because we value and believe in the evidential procedures that science currently endorses." Yes, but this is about scientific methodology, interpretation, and epistemology, and here we cannot just stand outside and have a general trust or distrust in science but must understand the problems and strengths in different kinds of scientific arguments and evidence. If information specialists are not trained in this, they are simply incompetent.⁴³ Feinberg (2018, 672) also briefly objected to the methodology suggested by the present author.⁴⁴ Despite the reservations raised above, Feinberg (2018) must be credited for that she, like the other feminist papers introduced, criticizes the view that knowledge is neutral and that she argues for personal engagement on the part of all of us.

This section has demonstrated that also the field of knowledge organization has been dominated by epistemological assumptions that have claimed neutrality but may have provided systems and services that have counteracted, among other interests, women's fight for equality. The points criticized do not only concern knowledge about women but are relevant as a general foundation of knowledge organization.

3.4 Epistemology

Based on the feminist criticism of "neutral" library and information science, scholars have suggested other epistemological principles based on or related to feminist epistemology. (Feminist epistemology should not be confused with the psychology or sociology of women. Psychology is the empirical study of how people are psychologically, whereas feminist epistemology is the normative lessons drawn on how to obtain knowledge in the light of women's experiences of claimed objectivity of male dominated societies).⁴⁵

According to Code (1998), the main contribution of feminism on epistemology has been to move the question "whose knowledge are we talking about?" to a central place in epistemological inquiry. In this respect, feminism is related to anthropological studies and critical epistemologies such as critical theory, all of which have demonstrated the limitations in traditional epistemologies as depending on the worldview of white, western men from upper social classes. The implication of this view is that feminist epistemologists are producing conceptions of knowledge that are specifically contextualized and situated, and of socially responsible epistemic agency and thus related to hermeneutic and pragmatic philosophies. However, feminist scholars do not agree on one epistemological view; Fox and Olson (2012) presented three main streams of feminist epistemology: feminist empiricism, feminist standpoint theory, and feminist poststructuralism.⁴⁶ They exemplified (93):

Poststructural feminists might begin by questioning the need for consistency. Is it the only way to achieve good search results? They might read the literature on consistency to find its implied opposite. What is consistency? How is it measured? If it is so important how do our current systems manage to function without it? People do find things in databases every day in spite of the inconsistency. Employing Cornell's philosophy of the limit [Cornell 1992], poststructural feminists might discern the limit of a database being made permeable by inviting users to voice their perspectives through social tagging.

Since the connecting thread in this article is about neutrality as an epistemological position, it is important to say that neutrality is not the same as objectivity (cf., Haskell 1990).

We have already presented Harding's (2005, 2015) concept "strong objectivity" as she associates with standpoint epistemology. She found that the politicization and pluralization of knowledge is not necessarily a threat to (strong) objectivity but one of its preconditions. Harding seeks to replace the "weak objectivity" of the male-dominated scientific world—a pseudo-objectivity riddled with value-laden theories, political biases, domineering interests, commodified research, and blinkered ethical vision—with the "strong objectivity" that comes only from a "robust reflexivity" attained through a rigorous self-scrutiny of one's socio-epistemological starting point.

Spivak (1982, 120) wrote "One cannot of course, 'choose' to step out of ideology. The most responsible 'choice' seems to be to know it as best one can, recognize it as best one can, and, through one's necessarily inadequate interpretation, to work to change it." Spivey (1995, 163) presented different techniques that may be used by feminist information scholars and found:

A type of feminist scholarship, standpoint epistemology, provides a methodology that can enrich information management and research. Standpoint epistemology is a compromise between the objectivity of positivism and the extreme relativity of postmodernism. A variety of techniques in feminist research diversify the information professional's services and studies.

Olson (1997) suggested from the point of view of feminist deconstruction that information storage and retrieval systems should name information in ways allowing space for the voice of the other in information systems. Strategies for this should work identifying the limits of existing systems and practices (194):

Identifying the limits is the important first step. Whether in terms of sexist language in thesauri and subject headings, homophobic placement of lesbian and gay topics in classification, or eurocentric bias in structuring personal names. Identifying the limits is like identifying the binary opposition. By doing so we come to understand the white, male, eurocentric, Christian, heterosexual, able-bodied, bourgeois nature of the assumed universal standards. Efforts like *A Women's Thesaurus* and *The Canadian Feminist Thesaurus/Le théâurus féministe du Canada* take the next step, throwing the existing standards off balance, raising the profile of the *Other* to make it obvious how arbitrary the exclusions in "mainstream" standards are. Both of these activities need to continue as part of the reflexivity which keeps us from becoming smug.

Olson further found (195) that such strategies cannot be devised to be readily transferrable from one context to another, because the result would simply be replacing old structures with new. Instead, they need to be locally contextualized. This means that general approaches and tools in KO may have limited value and points to the necessity of studying different domains.

Trosow (2001) provided a general criticism of the foundations of library and information science (LIS). He sees research traditions in LIS as deeply rooted in Enlightenment notions of western science. A central element of this tradition is the insistence on neutrality as a prerequisite to objectivity. In LIS, neutrality has also become a guiding practice. Alternative epistemological projects challenge Enlightenment-based conceptions and have much to offer research in LIS. Integrating these projects into the conceptual frameworks of LIS research will provide powerful epistemological resources for future work. He reviews a metatheoretical framework, and the qualitative/quantitative dichotomy, prevalent in LIS, is critiqued. Standpoint epistemology, as a critique of existing power-knowledge relationships, is discussed as a research strategy that can provide a starting point for reconceptualizing LIS research.

4.0 Researchers' and indexers' political attitudes

It is not the case that researchers or indexers/classifiers are necessarily explicit or conscientious about their values and goals, but the pragmatic view is that their research nonetheless has political implications. The pragmatic aspect may be involved in the selection of theories and perspectives (cf., Worrall 2000) and play a role for what theories in the end are accepted. For example, an astronomical theory may be preferred for another, because it better allows predictions, navigations, the construction of calendars, etc. However, such pragmatic issues are seldom conscious in so-called basic research. Also, positivist historians probably did not want to suppress women, they just believed that white, middleclass men could learn to interpret the historical sources so there was no need to consider sex or other subjective aspects of the researchers.

The connection between researchers' (and indexers'/classifiers') political attitudes on the one hand, and on the other hand their paradigmatic affiliation is difficult and not self-evident. Hacking (1999), for example, discusses "the science war" where physicist Alan Sokal challenges social constructivists. He wrote (95-6):

In terms of the unmasking of established order, constructionists are properly put on the left. Their political attitude is nevertheless very much not in harmony with those scientists who see themselves as allies of the oppressed, but also feel like the special guardians of

the most important truths about the world, the true bastions of objectivity. The scientists insist that in the end, objectivity has been the last support of the weak. Here is a disagreement: It is a rather messy matter, a sticky point involving deep-seated but ill-expressed attitudes. Who is on the left?

Andersen (1999) examined connections between social scientists' political attitudes and their disciplinary cognitive paradigms. He found that researchers are much more inclined to support the left wing compared to voters in general and the differences become dramatically more evident once the social sciences are broken down into individual disciplines. He wrote (94):

My guess is that these differences between disciplines roughly correspond with the folklore about social science disciplines in most countries - sociologists are more red, whereas business academics are more conservative. The proportion of left-wing voters in sociology is eight times that of business administration, although even in business administration the proportion voting right barely equals that of the total population.

About the relation to epistemological positions, Andersen (1999, 99) wrote:

Unlike beliefs about man and society, ideas concerning the nature and epistemological principles of science do not reveal persistent links to political ideologies. Philosophical traditions important to social science, like empiricism, rationalism, hermeneutics, pragmatics, and language philosophy, have occurred in varying styles with different, more or less pronounced political leanings. Exceptions of course are Marxism and critical theory. (Concerning Marxism, however, it is doubtful whether it expresses any single, distinct set of epistemic ideals.) Empiricist science, for example, has been claimed to serve emancipation and enlightenment, as well as radical movements for social reforms and welfare. However, since the critique of positivism over the past decades, this tradition has earned a more conservative reputation. Different branches of hermeneutics have differed concerning adherence to tradition, versus critique thereof.

Concerning the connection between political attitudes and paradigmatic positions, Andersen found (106):

These results provide a fairly convincing evidence that mistrust in the traditional, cumulative, and rationalist science view actually is associated with a left-wing political attitude. In addition, however, they show that

this association is most pronounced among researchers from social science fields outside economics and business administration (i.e., sociology, anthropology, political science, law, etc.). The connection between political and ‘academic’ leftism (in the meaning of Gross and Levitt [1994]) thus seems to be conditioned by disciplinary affiliation.

There is very little research on the relation between the political attitudes of indexers and the result of the indexing. Bodoff and Richter-Levin (2019) is so far the only study identified. That paper examined how papers about the Israeli–Palestinian conflict about which there are strongly held political opinions, among authors, indexers, and potential users. The results of the empirical study support the proposition that indexers’ personal views affect term assignment.

The overall conclusion is that there are connections between researchers’ and indexers’ political attitudes, their disciplinary paradigms, and their epistemological positions but that these connections seems to be complex.

5.0 Epistemological labels are contested

It should be said that almost all epistemological labels are contested. It is claimed, for example, that the classical distinction between empiricism and rationalism is problematic, because each of these labels covers many different philosophers, who have very little in common. The same can be said of all other labels, including “feminist epistemology” which covers many different feminist epistemologies. With regard to the label “positivism,” the word positivism is today mostly understood as an epistemological position which considers research to be driven by empirical studies with little theory playing a minor (if any) role. Often positivism is identified with quantitative methodology, and the view that the researchers are neutral investigators. However, “positivism” refers to a broad attitude about science and philosophy that in particular is ascribed to Auguste Comte (1798–1857) and to twentieth century logical positivism (that dominated about 1920–1960). Comte’s central positivist claims were: 1) that science is the highest form of knowledge and that philosophy, therefore, must be scientific; 2) that there is one scientific method common to all science; and, 3) that metaphysical claims are pseudoscientific. What today is mostly termed “positivism” and often ascribed to Comte is often far from what Comte actually wrote. As Turner (1993) expresses it, “Comte Would Turn Over in His Grave” if he could see how the term is understood today. Turner demonstrates that Comte’s “positive science” clearly and explicitly included a central role for theory in social research. Similarly, Comte dismissed as unscientific the kind of empirical research that is conducted in the absence of theory. That is, he stressed that sociological method

is in principle opposed to practices referred to today by many as positivism. In Comte’s words, as quoted by Turner (1993, 2), true social science seeks to avoid: “empiricism which is introduced into it by those who, in the name of impartiality, would interdict the use of any theory whatever ... [N]o dogma could be more irreconcilable with the spirit of positive philosophy ... no real observation of any phenomenon is possible, except insofar as it is first directed, and finally interpreted, by theory.” The understanding of logical positivism (also termed neo-positivism and logical empiricism) is not much better. Reisch (2005) argues that whereas students of logical empiricism and the Vienna Circle often treat these as strictly intellectual nonpolitical projects, in fact, the refugee philosophers of science were highly active politically and debated questions about values inside and outside science, as a result of which their philosophy of science was scrutinized politically from both within and without the profession, even by such institutions as J. Edgar Hoover’s FBI.

Even if the epistemological labels are contested and difficult, we cannot do without them. We need to characterize less fruitful versus more fruitful approaches to science, and this is the job for philosophy as well as for the theoretical parts of every science. In the words of Albert Einstein (1949, 683–684):

The reciprocal relationship of epistemology and science is of noteworthy kind. They are dependent upon each other. Epistemology without contact with science becomes an empty scheme. Science without epistemology is—insofar as it is thinkable at all—primitive and muddled.

Laudan (1984) suggested the following steps in the development of knowledge: i) in the case of disagreements on “a factual level” (e.g., the case of the psychology of women) by scientists, they try to; ii) reach an agreement by considering “the methodological level” (in this case, what kind of evidence supports a given theory of women’s psychology); and, iii) disagreements on a methodological level may be caused by disagreements on “an axiological level,” but such disagreements about values cannot be solved by an appeal to a yet higher level.

In daily life, we tend to accept the knowledge of dentists, doctors, lawyers, etc. But when much is at stake, we tend to look closer into knowledge claim and their basis. This is when epistemology becomes important.

6.0 Conclusion

This article has provided arguments that KO—like research in general—should not aim at being neutral (which should not, as formerly discussed, be confused with the goal of objectivity).⁴⁷ KOS should be conceived as systems that are fruit-

ful in relation to given goals and activities (rather than a true representation of a univocal reality). By implication, the study, the goals, and values like the study of the consequences of different approaches and solutions should have the highest priority (Bowker and Star 2000 exemplify such a study).

Take the classification of a given domain, e.g., fish. Nelson (2006) wrote:

The classification of fishes has undergone much change over the last few decades, and further changes are expected, partly because so many groups are poorly known. There are many conflicting hypotheses of relationships, some based on conflicting evidence between morphological studies and molecular studies.

In contrast to Szostak (2019), who wrote: “The classificationist need not and should not take sides on theoretical disputes within a field,” I find it hard to see how it is possible to classify anything (here fish) without taking sides on theoretical disputes within the field. Any concrete and specific classification will reflect the classifiers supporting one or another side of a given dispute. Perhaps the classifier is not aware of this, but this does not change the fact that he is taking sides (for example morphological studies at the cost of molecular studies if they are conflicting). The more qualified and scholarly a classification is (or an ontology or any other KOS), the more detailed must the study of the arguments put forward on both sides be evaluated, and the classifier finds herself deeply involved in theoretical issues in the domain. That such arguments normally are absent in the construction of, for example, library classifications, simply means that the construction of such systems cannot claim to be scientifically or scholarly based.

In order to classify a given domain one must examine how it is classified according to contemporary knowledge (including different views), to discuss the basis, the epistemological assumptions, and which interests are served by proposed classifications and finally to suggest a motivated classification. This is a highly qualified scholarly activity, and it normally implies taken sides in scholarly disputes at many levels, including the epistemological level. By implication, the study of different approaches, traditions, or “paradigms” in the domains to be classified becomes important. A fine example from the behavioral sciences is Slife and Williams (1995) about “uncover hidden assumptions” in this field—as have also been done by feminist scholarship. That important assumptions are often hidden, making their study more difficult. But still, it must be done if KO should be taken seriously. Besides studying the fields to be classified, we also need to study our own assumptions in KO and LIS (a beginning is made by Hjørland (2013b for KO and 2018c for LIS)).

All our actions (and passivity too), deliberately or not, have ethical and political consequences. To realize this is to realize that our perception and cognition is influenced by our cultural and academic background and values. Therefore, our methodologies should be more hermeneutical and reflective and reject epistemologies that deny or ignore the ethical, political, and ideological issues in research. A somewhat surprising conclusion is, therefore, that the most politicized epistemologies may be those that do not realize that there can be no such thing as a non-political epistemology; it is better to have explicit subjectivity than subjectivity disguised as objectivity.⁴⁸

Notes

1. The present article is an argument for the opposite point of view: that classifiers need to take sides in theoretical disputes about how to classify a given domain. We shall return to this quote in the conclusion of this article.
2. For discussion and criticism of Wikipedia’s NPOV, see Matei and Dobrescu (2011) and Mai (2016).
3. It is a deeply rooted conviction that libraries and librarians should be neutral. An early criticism of this view was Douglas Foskett’s pamphlet (1962) “The Creed of a Librarian: No Politics, No Religion, No Morals.” An article about “Politics of Representation in Museums” by Tythacott (2017). Huymans and Hillebrink (2008, 39), under the headline “Independence, objectivity” further wrote: “‘Public’ has traditionally been interpreted as meaning neutral and non-commercial.” That public libraries should not favor or disfavor certain political parties is important, of course, because they should help people forming their own standpoint. It could be said, however, that an important goal for public libraries is to support democracy itself, and in this issue it should not be neutral.
4. Subsequently, Bazerman wrote in an email: “Birger, Good point ... Nonetheless, the sentence does not say that the description provided is definitive or an ultimate or fully objective reality—only that it provides a description that is independent of interpretive judgments. But of course, scientometric methods themselves include criteria and procedural judgments. While it is hard to reconstruct my state of mind while revising the text, I likely was thinking that it referred to the kinds of narrative interpretation that historians or participants might give, and I did not stop to consider the assumptions embedded within scientometrics ... Chuck”
5. Lewandowski (2015, 278) wrote: “The presentation of a certain set of results is what I call an algorithmic interpretation of the world, that is, the web data. However, people often assume that search can produce right and

wrong results. They think that, if a search engine has found the 'magic formula,' it can provide its users with the best possible results. But there is no such thing as a 'right' results ranking (as opposed to a 'wrong' results ranking). At least for informational queries there are often hundreds if not thousands of relevant results. The goal of the search engines in these cases is not to provide a certain set of right/relevant results, but to list some of the potentially relevant results in the top few positions. And further (279):

we can see that searches are always biased, and there is no such thing as an unbiased search engine. It would be impossible to construct such a search engine, because human beliefs and assumptions influence the design of algorithms, and they therefore prefer certain documents to others. It is even at the core of every idea of ranking that, based on certain technically mediated assumptions, certain items are preferred over others.

Further references about the political nature of search engines include: Granka (2010), Introna, and Nissenbaum (2000) and Mager (2013).

6. For a discussion of Garfield's view, see Araujo, Castanha, and Hjørland (2019, 8-9).
7. Indexing in folksonomies have been called "democratic indexing." This term expresses an expectation about its political nature. However, folksonomies are not neutral. As Gartner (2016, 103) writes: "The great strength of folksonomy is often claimed to be that it has a degree of authority because it comes directly from the people and presents an unfiltered representation of their living culture free of ideology. An appealing idea, but, as has been made clear in earlier chapters, the notion of metadata being devoid of ideology is a utopian one. Folksonomies are as ideological as any other form of metadata and what they present are beliefs about the world that are as value-laden as beliefs always are."
8. A more detailed quote from *The Times Comprehensive Atlas of the World* (2014, 42): "The power of maps. Maps are an extremely powerful form of geographic representation. Maps define territory - they tell of ownership and domination, they Marshall spatial information. They can also subvert and propagate alternative world-views. All maps serve an interest and work through two main forms of power. First, the external power of their creators, often governments and their agents, who control the content of maps both in terms of what is included and what is withheld, and thereby broadcast a particular viewpoint. Second, the internal power of maps themselves - the perception of maps as precise, objective and accurate representations of reality which convey an image of geographical order. Maps are still regarded by many people as dispassionate represen-
9. Epistemology needs to be considered together with metaphysics. Metaphysical positions are theories of the basic nature of the world. Among the positions, idealism and materialism should be mentioned. Baur (2005, vol. 3: 1078; emphasis original) writes: "The term *idealism* in its broadest sense denotes the philosophical position that ideas (mental or spiritual entities) are primary and lie at the very foundation of reality, knowledge and morality, while non-ideal entities (such as physical or material things) are secondary and perhaps even illusory. Strands of idealistic thought can be found in ancient and medieval philosophy, but modern idealism begins in the wake of René Descartes (1596-1650), whose method of doubt problematized the relation of the mind (or spirit or ideas) to the material world and thus raised questions about how ideas 'inside' the mind can be known to interact with or correspond to any material, extended thing 'outside' the mind." It is important to realize that both rationalism (as mentioned, e.g., by Descartes) and empiricism (in particular by George Berkley (1685-175) have strong idealist tendencies. This is the opposite of the popular belief that empiricism and positivism are materialist or realist positions.
10. The concept slanted knowledge organization is used by, for example, Guimarães (2017), who wrote (89): "the term slant is used in accordance to the Oxford English Dictionary as 'a particular point of view from which something is seen or presented.'" Further on page 94: "The inherent existence of slants in KO processes, tools, and products derives from the fact that if KO, under a cultural paradigm, presupposes the socialization of knowledge, it is mandatory to recognize that this socialization process is embedded by different values or cultural standards that will be transformed into slants. In other words, every KOS is naturally committed to a certain world view and the assumption of a set of values and beliefs."
11. However, the classification/indexing of documents should be based on meta-descriptions in which the methodology and epistemology of the indexed papers form parts (cf., Hjørland 2018b, 624-5, Section 4.3).
12. What Pudovkin and Garfield (2002, 113) actually wrote was: "One of the referees asked for a description of the

tations of the external world. However, this has been challenged in recent decades as their political and cultural connotations are revealed and become more widely understood." However, in spite of this explicit recognition of the principle of non-neutral representation, and in spite of the atlas' demonstration of how interests have influenced other (former) maps and atlas, *The Times Comprehensive Atlas of the World* 2014 does not discuss the political choices and interests that have governed its own design.

9. Epistemology needs to be considered together with metaphysics. Metaphysical positions are theories of the basic nature of the world. Among the positions, idealism and materialism should be mentioned. Baur (2005, vol. 3: 1078; emphasis original) writes: "The term *idealism* in its broadest sense denotes the philosophical position that ideas (mental or spiritual entities) are primary and lie at the very foundation of reality, knowledge and morality, while non-ideal entities (such as physical or material things) are secondary and perhaps even illusory. Strands of idealistic thought can be found in ancient and medieval philosophy, but modern idealism begins in the wake of René Descartes (1596-1650), whose method of doubt problematized the relation of the mind (or spirit or ideas) to the material world and thus raised questions about how ideas 'inside' the mind can be known to interact with or correspond to any material, extended thing 'outside' the mind." It is important to realize that both rationalism (as mentioned, e.g., by Descartes) and empiricism (in particular by George Berkley (1685-175) have strong idealist tendencies. This is the opposite of the popular belief that empiricism and positivism are materialist or realist positions.
10. The concept slanted knowledge organization is used by, for example, Guimarães (2017), who wrote (89): "the term slant is used in accordance to the Oxford English Dictionary as 'a particular point of view from which something is seen or presented.'" Further on page 94: "The inherent existence of slants in KO processes, tools, and products derives from the fact that if KO, under a cultural paradigm, presupposes the socialization of knowledge, it is mandatory to recognize that this socialization process is embedded by different values or cultural standards that will be transformed into slants. In other words, every KOS is naturally committed to a certain world view and the assumption of a set of values and beliefs."
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procedures used by ISI [Institute for Scientific Information] in establishing journal categories for JCR [Journal Citation reports]. These procedures are followed by the ISI editorial group in charge of journal selection and are similar to those used for the SCI and Current Contents® journal categories. This method is heuristic in that the categories have been developed by manual methods started over 40 years ago. Once the categories were established, new journals were assigned one at a time. Each decision was based upon a visual examination of all relevant citation data. As categories grew, subdivisions were established. Among other tools used to make individual journal assignments, the Hayne-Coulson algorithm is used. The algorithm has never been published. It treats any designated group of journals as one macrojournal and produces a combined printout of cited and citing journal data.”

13. Mulkay (1978, 118) confirmed this: “So far in this discussion of scientific consensus I have tried to make two main points, namely, that the creation of consensus is a social as well as an intellectual process and that the extent of agreement among scientists within a given research area is often much less than has been supposed.”

14. Leonelli (2016, Chapter 5, 114-38: “What count as theory?”) is an important text about the theoretical nature of classificatory decisions.

15. Observations are by their nature singular. In order to obtain general knowledge, empiricism has to use inductive methods. However, as David Hume famously demonstrated it in the mid-eighteenth century, no amount of observations is ever enough. It can always be the case that your next observation contradicts the former. In contrast to empiricism, rationalism’s main method is deduction. As we saw in the quote by Hoyningen-Huene (2013) (note 25), from the time of Plato and until the early seventeenth century, deduction dominated in the view of science and knowledge, but that does not mean that there was no empirical research in this period. Aristotle, for example, was relatively empiricist compared to Plato.

16. Nickles (2005a) lists the following challenges which changed or ousted classical empiricism:

- 1) The linguistic turn;
- 2) The holistic turn;
- 3) Rejection of the analytic-synthetic distinction;
- 4) Rejection of the scheme versus content distinction by Donald Davidson;
- 5) Rejection of the correspondence theory of truth;
- 6) Rejection of the linear-foundational model of justification;
- 7) Anti-Kantian Kantianism;
- 8) Rejection by Karl Popper (1902-1994) and the positivists of the traditional identification of empiricism with inductivism;

- 9) Rejection of the imagist tradition that treats cognitive states or contents as little pictures before consciousness;
- 10) Rejection of “the myth of the given,” by Sellars and others; the idea that subjective experience provides a special, direct, infallible, nonnatural connection of knowing mind to known world;
- 11) the failure of phenomenism and sense datum theories of perception; and, more generally,
- 12) rejection of the whole Cartesian-Lockean conception of cognition and language;
- 13) The failure of attempts to define knowledge precisely as justified true belief; which inspired
- 14) externalism versus internalism in epistemology;
- 15) Recognition of the importance of tacit versus explicit knowledge (knowledge-how vs. knowledge-that) and of embodied knowledge, for example, skilled practices that we cannot fully articulate;
- 16) The feminist introduction of gender variables into epistemology;
- 17) Competing attempts to naturalize and socialize epistemology;
- 18) The postmodern critique of empiricism. Postmodernists, including Richard Rorty and radical feminists and sociologists, regard empiricism, epistemology in general, and, indeed, the entire Enlightenment project to replace a tradition-bound life (a closely related article by the same author is available at: <http://science.jrank.org/pages/9140/Empiricism-Twentieth-Century-Beyond.html>).
17. A similar criticism comes from social constructivism (or related positions) (Collin 2017, 458): “Even the application of a simple color predicate, such as ‘red,’ is not fixed by some Platonic essence, the Idea of Redness, or by a rigid notion of ‘similarity’ tying the present application to previous ones but is rather a free decision by the linguistic community. Communal consensus lays down the correct use of the term, on each particular occasion. The application of scientific terms, whether theoretical or observational, must hence be subject to all the vicissitudes of conflict, controversy, and contrary interests to which all things social are inherently vulnerable.” Whereas rationalists will claim that human observers have a universal, in-born ability to distinguish categories (e.g., color categories), more socially and historically oriented philosophers—like the quote—tend to explain the categories as socially and culturally developed.
18. Markie (1998, 75) wrote: “The term ‘rationalism’ has been used to cover a range of views. Scholars of the Enlightenment generally have in mind something like the first example—a general confidence in the powers of the human intellect, in opposition to faith and blind acceptance of institutional authority, as a source of

knowledge—when they refer to the rationalist spirit of the period and the work of such philosophers as Voltaire. Most frequently, the term ‘rationalism’ is used to refer to views, like the second one above, which introduce reason as a distinct faculty of knowledge in contrast to sense experience. Rationalism is then opposed to empiricism, the view that sense experience provides the primary basis for knowledge. This entry concentrates on this still very general form of rationalism, reserving the term ‘rationalism’ for it alone.” And, concluding (79):

“According to many contemporary epistemologists, rationalism, like such related theories as foundationism, is dead. It surely is beset with problems in both the innate idea thesis and the demonstrative knowledge thesis. Yet, a complete evaluation of rationalism must involve more than an examination of these two central points. It must also include an overall examination of the nature and extent of our knowledge and the nature and extent of our experience. Rationalism, in one form or another, will remain attractive so long as we find that we have knowledge of the external world which appears to go beyond what experience can provide.”

19. For an introduction to and overview of positivism, see Nickles (2005b). Klaus and Buhr (1972, vol. 2: 865; here translated from German) wrote from a Marxist perspective: “Positivism is a subjectivist-idealistic and by nature agnostic current in bourgeois philosophy in the 19. and 20. Century.” Klaus and Buhr were philosophers in the former East Germany (DDR) and they, therefore, express a Marxist criticism of positivism.
20. Objectivist norms should not be confused with the goal of objectivity, as Harding’s (2005, 2015) concept “strong objectivity” implies. Compare Mai’s (2011) differentiation between realism₁ and realism₂.
21. What is relatively new in the philosophy of science is the principle of fallibilism, which is a philosophical doctrine most closely associated with Charles Sanders Peirce and Karl Popper, which maintains that our scientific knowledge claims are invariably vulnerable and may turn out to be false.
22. Moita-Lopes (2012, 2): “Research is then [by positivists] constructed on the crucial principle that it is possible for the researcher to produce objective, replicable, and falsifiable knowledge. Statistics are therefore fundamental in determining the validity of findings since particular statistical tests which are adequate to specific research designs can demonstrate the significance level of results and can, so to speak, determine how truthful they are. This particular ideology as regards research methodology is still prevalent in a lot of what is called AL [applied linguistics] research due to the deep influence positivism has exerted across the academic world.”

23. There are different kinds of social constructivism and also different labels such as social constructionism. In this article, we do not differentiate these positions.
24. Social epistemology was first suggested by library scientist Jesse Shera (1951). See also Hjørland (2018a).
25. Hoyningen-Huene (2013) describes four phases in the development of views about science: “In the first phase, starting around the times of Plato (about 428–348 BC) and Aristotle (384–322 BC), two traits for scientific knowledge are postulated that are relevant in our context. It is, first, the epistemic ideal of the absolute certainty of knowledge and, second, the methodological idea of deductive proof as the appropriate means to realize this ideal” (2).

“The second phase in our schematic history of philosophy of science begins in the early seventeenth century and ends sometime in the second half of the nineteenth century. It continues with the first phase in equally subscribing to the epistemic ideal of the certainty of scientific knowledge. However, it is discontinuous regarding the means by which this ideal is to be achieved. Whereas in the first phase, only deductive proof is a legitimate means to attain the certainty of knowledge, the second phase liberalizes this requirement to what will eventually be known as the “scientific method.” This expression either denotes one single method, or it is taken as a collective singular referring to a certain set of methods; what is meant exactly is typically left unanswered” (3).

The third phase: “Timing the start of the third phase is quite an imprecise matter as it is the result of a process of slow erosion of the belief in scientific certainty. For reasons whose details still await in-depth historical research, especially with respect to their interaction, the conviction of the certainty of scientific knowledge already decays in the late nineteenth century. This is true both with respect to the mathematical, the natural, and the human sciences, although mathematics is able to restore its claim for conclusiveness by a decisive turn. ... At any rate, especially after the revolution in physics in the first quarter of the twentieth century, the belief that scientific knowledge is not certain and can never be, but is hypothetical and fallible, becomes dominant both in scientific and philosophical circles.” (3-4).

Fourth phase: “At present, we are in the fourth phase, which started sometime during the last third of the twentieth century. In this phase, belief in the existence of scientific methods conceived of as strict rules of procedure has eroded. Historical and philosophical studies have made it highly plausible that scientific methods with the characteristics posited in the second or third phases simply do not exist. ...

Note that only in the present fourth phase, the question about the nature of science becomes dramatic, because the only feature left for science, namely fallibility, is by no means a sign for its uniqueness. Therefore, it is no exaggeration to state that although we are familiar today with the phenomenon of science to a historically unparalleled degree, we do not really know what science is" (4-5).

26. Caputo (2018, 4-5):

Hermeneutics is the theory of interpretation. It is the theory that everything is a matter of interpretation.

But aren't certain things just facts?

In hermeneutics, we defend the idea that there are no pure facts. Behind every interpretation lies another interpretation. We never reach an understanding of anything that is not an interpretation. We can never peel away the layers to get to some pure, uninterpreted, naked fact of the matter. No matter how loudly you proclaim you are just sticking to the facts, you are only raising the volume of your own interpretation. In hermeneutics, I like to say, interpretation goes all the way down.

Does this go for what you just said?

Of course, I am presenting an interpretation of hermeneutics, which I am prepared to defend against the alternatives, which I will point out as we go along. Interpretations go all the way down, but some interpretations are better than others (which I will also explain as we go along). It is important to hold both thoughts in your head at the same time.

So, you're saying facts don't matter. How can you deny that there is a distinction between a neutral fact and an interpretation?

Facts matter quite a lot. That's why it really matters that we understand what facts are. To understand anything at all requires having an angle on it, a perspective, an interpretive slant, in the absence of which we would just not understand, period. A neutral and disinterested understanding is pretty much a blank, unknowing stare. It is the look you see on the faces of students with a writing assignment without the least idea of what they are going to do. Their problem? No slant, no angle of entry, no interpretation. The facts you find are a function of the interests you have, and disinterested interpretations are nowhere to be found. A disinterested understanding has never got a term paper written, or anything else." And (9): "We deconstruct the idea of pure objectivity or pure facts and replace them with the dis-

tinction between good interpretations and bad ones."

This view is also in accordance with the claim of fallibilism, the thesis that no belief (theory, view, thesis, and so on) can ever be rationally supported or justified in a conclusive way. New knowledge may potentially revise our beliefs.

27. Hoyningen-Huene and Lohse (2015, 136) wrote:

"Kuhn argues that the abovementioned historical-hermeneutical approach to the history of science can provide us with important data that a reasonable philosophy of science should incorporate. This is frequently referred to as the 'historical turn in philosophy of science.' Pre-Kuhnian philosophy of science, in contrast, unknowingly depends on a stereotypic picture of scientific development, which has its origin in a presentist interpretation of past scientific theories via modern scientific concepts."

28. Friedman (2001, 18-19; emphasis original): "We know, from Carnap's correspondence with Kuhn at the time, as well as from his own unpublished notes, that Carnap himself was extremely enthusiastic about Kuhn's work.[note 19]. There is considerable irony in this, of course, for *The Structure of Scientific Revolutions* is often taken to represent the death-knell of the logical positivist philosophy of science represented by Carnap. Indeed Kuhn himself, in a state of blissful but perhaps forgivable innocence of the positivist's early work on the revolutionary import of the theory of relativity, uses that very theory to make his own case, on behalf of his conception of 'the nature and necessity of scientific revolutions,' *against* what he calls 'early logical positivism.'"

Reisch (2005, xiii) wrote: "Logical empiricism was originally a project that self-consciously sought engagement not only with science but with progressive social and cultural developments (both in Europe of the 1920s and in North America of the 1930s and '40s). In the space of about ten years, however, from roughly 1949 to 1959, it became the scrupulously nonpolitical project in applied logic and semantics that most philosophers today associate with the name 'logical empiricism' or 'logical positivism.' Since several logical empiricists' careers crossed paths with anticommunist politics on campus, in major philanthropic organizations, and in J. Edgar Hoover's FBI, there is evidence that anticommunism was a force behind this transformation. It affected the kind and range of problems that philosophers of science pursued, the methods and tools employed, and the relations between philosophy of science and science itself."

29. Among texts on pragmaticism, Pihlström (2009, 2011) can be mentioned.

30. Todt and Luján (2017, 217) wrote: "Traditionally, a fundamental distinction is made in philosophy of science between cognitive and non-cognitive values (McMullin 1982). Cognitive values are understood to be those internal to scientific activity itself. Those are, for instance, explicative power, accuracy, simplicity, scope, precision, as well as internal or external consistency ... Non-cognitive values, in contrast, refer to the social, economic and organizational contexts in which scientific activity takes place. Examples of such values (that are of particular importance in areas like technological product design, decision making, or public policy) are operationalization, applicability, robustness, protection of human health and the environment, adaptability, resilience, controllability, etc." McMullin (1982) argues that the appraisal of theory is in important respects closer in structure to value-judgement than it is to the rule-governed inference that the classical tradition in philosophy of science took for granted.

31. The pragmatic thinkers "seek to bring about a sea change in philosophy that highlights the social character of human experience and normative social practices, the self-correcting nature of all inquiry, and the continuity of theory and practice. And they—especially James, Dewey and Mead—emphasize the democratic ethical-political consequences of a pragmatic orientation" (Bernstein 2010, back cover).

32. Pragmatism is not to be confused with (social) Darwinist or evolutionary epistemologies, which neglect the socio-cultural nature of human cognition.

33. See, for example, Miller (1998), Sheehan (1993), Agostinone-Wilson (2013), and Vickery (2005, 2006). It is often claimed that Marx considered the human and social sciences, in contrast to natural science, as formed by ideology and political interests. Compare, however, this quote by Miller (1998, 147):

"Marx's approach to science is an intriguing combination of respect for the natural sciences and empirical inquiry, determination to go beyond the description of regularities among observable phenomena, and insistence on the inevitable impact of social circumstances on scientific inquiry. Marx thought that the human sciences and the natural sciences are governed by essentially the same methods, that natural-scientific theories give us enhanced insight into mind-independent reality, and that our most fundamental views are subject to revision through scientific inquiry. Yet Marx rejected the ideal of scientific method according to which rational scientific belief is tied to observational data through a canon of rules as general, timeless and complete as the rules of logical deduction. While traditional empiricists emphasize the economical description of empirical regularities which could, in principle, be used to predict the occurrence of observable phenomena, Marx emphasizes the description of underlying causal structures, employing concepts that are typically irreducible to the vocabulary of mere observation, and causal hypotheses that sometimes do not even sketch means of prediction. Similarly, though Marx shared the optimistic view that science gives rise to long-term improvement in our insight into underlying causes, he disagreed with many epistemic optimists in his insistence that scientific inquiry is inevitably and deeply affected by social interests and relations of social power."

34. Habermas (1970) was a reaction to a critical view of technology formulated by Marcuse (see Feenberg 1996: "Recently there has been a revival of quite radical technology criticism in the environmental movement and under the influence of Foucault and constructivism. This article takes a new look at the earlier debate from the standpoint of these recent developments. While much of Habermas's argument remains persuasive, his defense of modernity now seems to concede far too much to the claims of autonomous technology. His essentialist picture of technology as an application of a purely instrumental form of nonsocial rationality is less plausible after a decade of historicizing research in technology studies. The article argues that Marcuse was right after all to claim that technology is socially determined even if he was unable to develop his insight fruitfully").

35. See Velody and Williams (1998) about "the politics of social constructionism."

36. About the ethical dimension of epistemology see also Pörksen (2014).

37. The quotes around scientific mean that it is the self-understanding of that particular epistemology and that it is properly scientific, while criticism, including arguments put forward in the present article, claim the opposite (that a proper scientific approach has to be based on an alternative epistemology).

38. *The American Historical Association* was founded in 1884; *the American Historical Review* started in 1895. Hamerow (1986, 320-1) wrote: "In America the rise of a historical profession took place about a generation later than in Europe ... As late as 1884, when the American Historical Association was organized, there were in the four hundred institutions of

higher education in the United States no more than fifteen professors and five assistant professors teaching history exclusively, although many more combined it with political science, political economy, literature, philosophy, philology, geology, natural history, and modern languages. By the time the American Historical Review was founded in 1895, however, there were about a hundred full-time college teachers of history—almost half of whom had studied at a German university—and the number was increasing steadily.”

39. The concept of general intelligence is itself a contested concept, as is the claim that the existing intelligence testing is testing something independent of learning. We will not go into this debate in the present paper.

40. Nyborg’s research has been very controversial and heavily discussed in, among other places, the media (see, for example, https://en.wikipedia.org/wiki/Helmuth_Nyborg).

41. James Flynn’s own view is that something like general intelligence does exist, but that our existing intelligence tests are not able to measure it. For the arguments put forward in this article, it makes no difference. In all cases, Nyborg’s conclusion has been reached without considering the educational background of the women tested. One may ask why such a neglect has been accepted among intelligence researchers? Here, “the parable of the blind spot” is relevant (Pørksen 2014, 141): people in different paradigms have blind spots, that they are not aware of: “We do not see—that we do not see.”

42. Compare the discussion of user unfriendliness in Hjørland 2013c.

43. Feinberg’s sentence that science is the same as Fox News is also problematic. Consider, for example, Al Gore’s film *An Inconvenient Truth* (2006) in which two studies were cited in order to explain why so many people remain skeptical about global warming. The first study looked at a random sample of almost 1,000 abstracts on climate change in peer-reviewed scientific journals from 1993 to 2003 and found that exactly zero doubted “that we’re causing global warming.” The second surveyed a random sample of more than 600 articles about global warming in popular media between 1988 and 2002 and discovered that 53% questioned “that we’re causing global warming.” This film is of course not a scientific documentation and its conclusion is simplified compared with the literature in this field. It is, however, sufficient to demonstrate the danger of believing that “science is objective in the same way that Fox News is objective.” And it seems important to teach students about the danger of depending on popular media at the expense of scholarly literature.

44. Feinberg (2018, 672) also briefly objected to the methodology suggested by the present author: “Birger Hjørland’s description of domain analysis, which proposes that knowledge organization systems should document the epistemological perspectives associated with the various schools of thought in a subject domain [Hjørland and Albrechtsen 1995; Hjørland (1998) and Hjørland 2002] ... While Agre observes that the presentation of librarianship as neutral and objective is a strategic choice to legitimize a certain form of information access, he does not propose that librarians should articulate their own positions regarding the materials that they make available. Indeed, Agre (along with Hjørland and Wilson) implies that librarians might continue to remain outside the literatures they collect, describe, and provide access to—that librarians should explain these literatures but not participate in them.”

This is, however, wrong. The core in Hjørland’s domain analysis can be summarized in this way: 1) go to a given domain; 2) look at how it is classified according to contemporary knowledge (including different views); 3) discuss the basis, the epistemological assumptions, and which interests are served by proposed classifications; and, 4) suggest a motivated classification. Domain analysis does not say or imply that all epistemological positions are equal and does not just stand outside and describe them. As in the present article about political and “neutral” epistemologies, the aim has always been to criticize unfruitful approaches and advocate for what is considered fruitful (in this article, for example that claimed apolitical epistemologies often represent subjectivity disguised as objectivity, why it is better to have subjectivity that is not disguised, thereby taking a standpoint, and not standing outside. Consider also Hjørland (1992, 189; emphasis original): “*Thus an analysis of a subject is itself, at its most profound, a part of the scientific process of knowledge gathering.*” Explicitly this quote states the opposite of Feinberg’s claim: the librarians (indexers, classifiers etc.) cannot be outside the literatures they deal with but are actively participating in the struggles about how best to develop the knowledge in the domains (there are many other examples—indeed this is the main message in the whole of Hjørland’s argument—and it is difficult to understand why Feinberg does not acknowledge this).

45. Computer and information scientist Karen Spärck Jones (1935–2007) said “I think it’s very important to get more women into computing. My slogan is:

Computing is too important to be left to men. I think women bring a different perspective to computing, they are more thoughtful and less inclined to go straight for technical fixes. My belief is that, intellectually, computer science is fascinating—you’re trying to make things that don’t exist.” This quote is about how women are (biologically and socially) not—or at least only indirectly—about principles for obtaining knowledge, e.g., in research methodology. Karen Spärck Jones’ quote found here: <https://web.archive.org/web/20070408120148/http://www.admin.cam.ac.uk/news/dp/2007040403>

46. Fox and Olson (2012, 94-5) wrote: “The three traditional feminist epistemologies that we have discussed-feminist empiricist, feminist standpoint, and feminist post structural-are the major divisions of a spectrum from objective to subjective. The objective end of the spectrum is characterized by an anonymizing distance between the knowing subject and the known object. Feminist empiricists, acting within an objective epistemology, do not advocate approaching the known object. Rather, they focus on neutralizing gender bias in traditional empiricist knowledge drawn from formalized experience and research, typically focusing on the assumptions-choice of research questions, variables, and samples—that often exclude women. At the other end of the spectrum is feminist post structural epistemology, which facilitates the revelation of the hidden discourses that govern our understanding of our world. Because post-structuralists view people, concepts, and even discourses as constructed, the boundaries between them are also constructed. That includes the boundary between the knowing subject and the known object. As a result, there need be no distance between the two. Between empiricist and post structural feminist epistemologies is feminist standpoint theory. Like other social epistemologies it focuses on social groups, where they stand in relation to the rest of society, and the consequences of their view or standpoint. The foundation of any standpoint epistemology is that those at the margins of society have a clearer view than those in the mainstream because in the margins they need to know both the margins and the mainstream to survive while those in the mainstream need not know the margins.”

47. To say that KOS (and other research) should not aim at neutrality should not be understood as a politically motivated choice that ignores empirical data and scholarly arguments. The worst thing, of course, is when people do not search for truth and ignore existing arguments and evidence but only believe and

argue what they want to be true. There can be an unholy alliance of ignorance and manipulation that is mutually supportive. In this sense, “political science” (or “politicized science”) and “political epistemology” are things that are opposed to all academic ideals, which is to be seriously fought.

48. However, if scientific arguments are political, what is the difference between science and politics? The answer may be that science is systematic (Hoyningen-Huene 2013) and that its systematicity includes the Mertonian norm of “organized skepticism,” which means that all knowledge claims must be open to critical scrutiny by means of further research (Merton 1973 [1942]: 277). We should always be self-critical and, for example, consider the arguments against the views that are forwarded in this article (e.g., the arguments put forward against partisanship by Hammersley 1999). That it is not always easy to challenge the belief that science should be “value-free,” can be seen in Douglas’ attempt (2009) and the review of that book by Pielke (2011).

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