

Decolonizing Knowledge. Starting Points, Consequences and Challenges

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Abstract: The call for the decolonization of knowledge refers to both its colonization and contingency and puts the focus on the multiplicity of knowledge. This contradicts European-North-American thinking and definitions of knowledge. Consequently, to advance an epistemological decolonization of knowledge, the actual process of defining knowledge will be analysed and the *multiplicity* of perspectives stressed at the epistemological level. Using Indian epistemology as an example, I will work out differences in definitions of knowledge and therefore basic diversifications in describing and explaining the emergence of knowledge. Truth-value-neutral forms of knowledge in particular challenge dominant European-North-American philosophical definitions, which incontrovertibly include assumptions of true or false knowledge. An interesting overlap between some Indian epistemologies and postcolonial theories can be observed with regards to the central role of the contextualization of knowledge production and the socially embodied nature of scientific knowledge in general. If the incentives gained are to be taken seriously, the consequences for educational science in general as well as educational practices must be discussed. According to the findings of organizational theory, emphasis on diversification and complication is also seen as an opportunity for the emergence of fresh meaning. Referring to Helen Verran's concept of generative tension as a sign of collective creativity, encounters between diverse forms of knowledge and epistemological principles are seen as sources of creative processes and prerequisite for the emergence of new positions, perspectives etc., and thus as incubators for innovations.

Keywords: Knowledges; Indian epistemologies; singularity and multiplicity; social embedment (or relationality) of knowledge and education.

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1. Introduction

Knowledge as a basic question for epistemological thoughts is central to any kind of education. In this contribution, knowledge and especially its definition will be central to the considerations on epistemological decolonization. The fundamental function of any educational institution is to impart some kind of valuable information, practices, competencies etc. Yet here, we already notice the difficulties in defining

what is meant when talking about knowledge in more detail. Knowledge forms the core of traditional Western Enlightenment myths and is the main characteristic in recent descriptions of societies as *knowledge societies*. Both are supposed to be good or valuable «developments», which means that they are valued normatively. Accordingly, decolonizing knowledge is tough work, because it brings uncertainty, which no one likes when it comes to core concepts or foundations of societies. Decolonization points to the *colonization* of knowledge in the first step, and therefore to the potentially biased character of knowledge in general: it shows the *contingency* of knowledge, as it emerges diversely in different contexts. However, knowledge shall not be biased but «true» from a European-North-American¹ point of view. We will see that this is, however, not a universal and globally shared image of knowledge. Ambivalence and uncertainty about the very concept of knowledge are consequences of the emerging awareness of its contingency, which is especially problematic for science with its monopoly on pure, reliable knowledge and knowledge production. More precisely, the perspective of decolonization brings *multiplicity* of knowledge and contradicts European-North-American thinking, which will be dealt with in more detail in the following. The multiplicity of knowledge becomes problematic against the backdrop of belief in a single knowledge that actually can be known, and the possibility of distinguishing between true and false. This does not apply to other logics e.g. Jain thinking (Clemens & Biswas, 2018), where such ultimate judgments about knowledge are not permissible in principle. In the following, by recognising the multiplicity of knowledge through decolonialization, contingency becomes visible on all levels –on the level of knowledge itself as well as its definition and therefore in terms of epistemological preconditions–. Contingency in turn, almost always provokes uncertainty everywhere. Multiplicity of knowledge goes far beyond the idea of different perspectives (e.g. on the «same» object). It is about the possibility of knowledges, maybe even (although not necessarily) contradictory yet equally valuable. This is followed by rivalry and questions of power, too, as debates might arise about the better, more valuable or the *right* knowledge. This leads to the even more problematic question of who has the ultimate say. Such a judgment requires a decision about valid criteria for judging whether something is knowledge. The person who dictates the criteria of judgment undoubtedly channels the judgment itself. Exactly this has been the case for definitions of knowledge, philosophy and logic for a long time as European-North-American definitions have stipulated the criteria and thus set the frame for acceptable and recognizable knowledge, philosophy etc. Due to the dominance of European-North-American thinking, the thoughts emerging in various schools e.g. on the Indian sub-continent all too often did not meet the criteria for acceptable knowledge, philosophy or logic (Biswas, 2017; Raina, 2009).

¹ This term will be used in the following instead of older descriptions such as Western because this is neither geographically logical (something is located in the West in relation to the location of the observer, which varies for different readers and is as such relational) nor metaphorically useful, as it carries old prejudices such as developed and not-developed, modern and traditional etc. The term refers to dominant semantics from Europe and North-America, which claim that scientific knowledge and technical innovations have been invented mainly in these contexts.

In reference to the dominant narratives, Europe and later North America² have been the main (or more or less only) producers of valuable, especially scientific knowledge for the last centuries. Ideas of multiple modernities or transmodernity have been a pre-condition for the sheer possibility of taking non-North-American-European constructs into consideration at all when it comes to knowledge. Authors like Eisenstadt and many others have shown that despite the fairy tale of the diffusion of one modernity and ongoing homogenisation, the persistence of differences in nations, civilizations or cultures (or other descriptions for social figurations) can be observed. That led to a growing awareness of different forms of knowledge as well, discussed e.g. under the highly contested term of indigenous knowledge or theories (Clemens, 2009a). However, interestingly, this awareness of the multiplicity of knowledge and associated debates are seldom reflected in the educational science discourse. The volume at hand therefore presents a very good opportunity to contribute to this urgently needed discussion.

So what could be a strategy of promoting an epistemological decolonization of knowledge? Following the above, I propose here a rather basic access to this question by starting below in section (2) with the very process of *defining* knowledges and by stressing multiplicity of perspectives on this epistemological level. Referring to an example from India, I will work out differences in definitions of knowledge and therefore basic varieties of describing and explaining the emergence of knowledge. However, explicating the Indian examples of epistemological debates about knowledge is by no means an intellectual exercise for its own sake. On the contrary, taking the gained incentives seriously means discussing related consequences for educational science and practice in general in section (3). What would a change of perspectives towards recognition of multiplicity of knowledge mean for educational science, its concepts and practices? Paradigm changes such as a demand for educations for all as a consequence of decolonizing education come to mind here.

2. Defining knowledge – Indian perspectives and general thoughts

As I discuss examples of Indian philosophy and epistemological thoughts in the following, I will concentrate on cognitive or mental aspects of knowledge in accordance with these thoughts. This in no way means that I wish to neglect other aspects of knowledge such as embodied knowledge. They are very important as I have shown elsewhere (Clemens, 2017), however the focus here is different, as e.g. the role of language will be debated following the Indian thinker Nagarjuna. The struggle for the acceptance of Indian perspectives as scientific knowledge - or in the case of philosophy as logic – is long. The tendency to include social and psychological components for consideration on all levels of construction has been one of the reasons why Indian approaches have been neglected and a scientific or philosophical status denied. Interestingly, there are parallels to more recent approaches in the sociology of scientific knowledge and postcolonial standpoints, as Dhruv Raina (2009) has pointed out. For example, in postcolonial perspective, the production of scientific knowledge «is viewed from a contextualist perspective across

² One could add Australia, of course, if one wishes.

the frames», and the «sociology of scientific knowledge highlighted the distributed nature of the process of knowledge production, argued for the *socially embodied nature of scientific knowledge* and thereby brought into the field of visibility a variety of actors hitherto invisible to the gaze of the historian or sociologist» (Raina, 2009, p. 621, accentuations IC). We will return to the emphasis on social aspects of knowledge in postmodern science in (3). In a first step, I analyse exemplarily the identification of knowledge in an Indian epistemology and discuss related consequences for the decolonization of knowledge in the following.

2.1. *Identification and definition of knowledge(s)*

As often in analyses across cultural contexts, the problem starts with language and associated translations. With regard to language, Nagarjuna, «a pioneering personality of Mahayana Buddhism» (Gokhale, 2010a, p. 1) who lived around the 2nd century AD, criticises: «Languages and thought consist of *vikalpas*³, i.e. mental constructs. These mental constructs appear to have fixed, essential features; they are imposed on reality as identifying features, *svabhavas* of the elements of reality. Language thus plays an essentialising role, which distorts the true nature of reality being mental constructs they [language and thoughts] themselves are not closed but open-ended, not absolute or essential but relative. The relative (*pratitya*) nature of the core concepts we use while talking or thinking about the world gives rise to paradoxes» (Gokhale, 2010a, p. 14). Accordingly, if languages and thoughts consist of mental constructs, knowledge is at least partly an assemblage of such constructs, or more precisely a result of such an assemblage. As a result, it *distorts reality* (or creates it, as constructivism puts it), emphasizes the relative character of all mental constructs, such as knowledge and indicates the interaction of concepts with a given context. But through their asserted, essential feature, such core concepts cover their relativity and suggest *as if* they were fixed, like knowledge in the European-North-American sense, which is supposed to be valid in time and space, always and everywhere. And the same is assumed for education: one education for all. The paradoxes stressed by Gokhale above, which emerge when we use these relative core concepts while talking about the word in general, evidently multiply when different languages and relations to various, differing contexts are involved.

There is yet another problematic presupposition with regard to the concept of knowledge though. Discussing knowledge in different contexts presumes that such an overarching, implied concept of knowledge can be found everywhere. Here again, the European-North-American concept of knowledge sets the frame and delivers the criteria for the content of the discussion. Nevertheless, it is not easy to identify a concept of knowledge or an exact analogue in Indian epistemological literature. In general, all too often, «cross-cultural dialogue between philosophical traditions has been set within the frame of the Western philosophical tradition which provides a vocabulary and a grammar within which to apprehend or translate the Indian philosophical tradition» (Raina, 2009, p. 622). The difficulties of the so-called comparative method become visible here as well, because comparison was

³ Indian terms consist of special characters, which cannot be reproduced here.

always done from the European-North-American perspective, and in consequence the «foreign» (Indian or else; in any case it is important to stress that there is no such thing as *the* Indian philosophy etc.)⁴ always had problems fitting into the framework of that alternative way of thinking (Gokhale, 2012). In the Indian case, this led to descriptions like idealistic, intuitive, experiential or pragmatic as opposed to European-North-American philosophy as intellectual, abstract, theoretical etc. «Even in well intentioned dialogues», Raina (2009) points out in his critique of the comparative method, «attention is not often paid to the systemic levels at which the dialogue is organized» (Raina, 2009, p. 623).

Following Gokhale (2010b), the difficulty starts with a somehow acceptable translation of the term knowledge itself. The term *jnana* is used in many Indian languages as an equivalent to the English term knowledge. However, there are several forms of *jnana* such as *yatharthajnana* or *ayatharthajnana*⁵ etc., which owing to a lack of appropriate English terms, are often translated as valid and invalid knowledge, true and false or right and wrong. This however, does not consider the Indian concepts. The problem is that in English, «“knowledge” is supposed to stand for “true belief” or “justified true belief” and hence knowledge is not supposed to be truth-value-neutral, whereas belief is supposed to be so» (Gokhale, 2010a, p. 2). This has many implications, e.g. true knowledge actually exists and that one can distinguish between true and false knowledge. It marks the difference between knowledge and belief in North-American-European thinking, as belief is seen to be truth-value-neutral. On the contrary, some Indian epistemologies, similar to the Buddhist tradition, know truth-value-neutral forms of knowledge. We find here an alternative concept of knowledge. It is only «mainly in Vedanta tradition that the word *jnana* is used in the sense in which it necessarily yields truth. Hence we can perhaps translate *jnana* as knowledge in Vedanta context, but we cannot do so in Nyaya, Buddhist or Purvamimamsa context» (Gokhale, 2010a, pp. 2-3). The *problem of knowledge* counts among important, general philosophical global questions that are relevant independent of time and fashion. It is linked to questions of «criteria, the problem of perception and the status of the external world» (Raina, 2009, p. 623). What is identified as knowledge and why? How does it differ from ignorance? Where is knowledge located – in the observer, or in the observed? How does one know... through perception or inference? And is there a world independent of the observer, to name just a few.

In European-North-American thoughts, the origin of knowledge is central. Where does knowledge come from? How does it emerge? Different traditions have found different answers, as e.g. rationalists stress reason as a source of knowledge while empiricists emphasise science. Again, alternative ways of thinking about basic conditions and relations of knowledge become obvious, as «the Sanskrit tradition

⁴ As Raina puts it: «an issue that needs to be addressed is that Indian philosophy itself is internally quite diverse and large constructions of systems such as Indian philosophy collapse the internal distinctions between the different streams that comprise the Indian philosophical tradition» (Raina, 2009, p. 622). It is only the Hindu fundamentalist movement, which wants to establish a thinking of a homogenous Hindu heritage.

⁵ For the sake of readability and as mentioning the many other terms would not enhance my core argument or lead to a better understanding, I will not go into these terms in more detail.

has no equivalents for either of these terms» (reason and science), and Raina rightly asks in the following: «How do we transit from the discussion of “knowledge” in one system to another, when there are differences in some essential conceptions?» (Raina, 2009, p. 623).

Before discussing a second aspect of the difficulty involved in identifying an exact analogue of knowledge in Indian epistemologies, a deeper look into the very idea of true and false knowledge and its rejection is instructive for understanding the far-reaching consequences of dissimilar concepts. In European-North-American tradition, something is either true or false, knowledge or not knowledge. It is a two-valued logic system and builds on singularity and decidability. This is not the only possibility of defining knowledge though e.g. the Jaina logic (Jaina philosophy is among the oldest schools of thought in the Indian context and probably dates back to the 6th Century BC) does not use this non-contradictory, two-valued logic. This shows that the quality of unopposed thinking and a bivalent perspective do not have to be a criterion of logic in general simply because European-North American socialization makes some people believe so. The same might be true for knowledge, and there might be knowledge forms that are knowledge and yet contradictory and/or truth-value-neutral. Contrary to European-North-American standpoints, in Jaina philosophy reality cannot be expressed in simple and absolute statements *at all*. If we think of the immense complexity of reality, indeed this sounds reasonably doubtful. In this view, such an approach would simplistically reduce the complexity of being. «A valid claim of knowledge, according to the Jainas, is described through seven propositions, which encapsulate the multifaceted nature of a phenomenon. Further, each proposition should be explicit about its conditional character and therefore begin with the term *somehow* or *in a certain sense* e.g. somehow I am writing this text. Although in principle, everything can be seen from infinite perspectives since each of the propositions can be further analyzed from seven standpoints, Jainas hold that the seven standpoints in themselves cannot be reduced or increased further» (Clemens & Biswas, 2018, p. 14). To give an example, Biswas (2017) lists the seven propositions in this way: 1. Somehow, I am reading. 2. Somehow, I am not reading. 3. Somehow, I am both reading and not reading. 4. Somehow, this is indescribable. 5. Somehow, I am reading and this is indescribable. 6. Somehow, I am not reading and this is indescribable. 7. Somehow, I am and I am not reading and this is indescribable. This approach emphasises the dependance of any statement on the position of observation and rejects the possibility of suspending situatedness. These thoughts have far-reaching consequences for the proclamation of knowledge of course, and are contrary to the European-North-American logical distinction of knowledge as either true or false.⁶ In Jaina thinking, relationality (in the sense of relational approaches) is contained in the observations. Without going more into detail about sophisticated philosophical debates, one can ask what we can gain from these thoughts. The consequence is that the problematization of the singularity of knowledge is an important part of *decolonization of the concept of knowledge*

⁶ Generally speaking, the question of the constitution or proclamation of knowledge applies to all global scientific systems at any time. This was also one of the central problems e.g. for Greek philosophy.

itself on a very basic epistemological level. It opens up the space for observations and descriptions of what to term «knowledge» and leads towards the possibility of multiple perspectives as a pre-condition for decolonization.

This is also crucial with regard to socio-political transformations: the more complex global relations become, the more questionable becomes the European-North-American lifestyle and the exploitation of resources, the more obvious becomes the contingency of «development» paths and associated knowledges, and alternatives are attracting more and more attention and gaining importance. I will discuss some consequences for education in the last section. Following the above, decolonizing knowledge means taking the plurality of knowledges and their definitions into consideration. The important point is that these knowledges and their epistemological bases are equally entitled. However, following e.g. Ganeri (2017), in Jaina thinking the existence of a plurality of equally good approaches certainly does not mean that they cannot be evaluated according to certain standards. Nevertheless, the proper norm of evaluation is not the binary of truth versus falsity. This only means excluding plurality again. Instead, «a stance is evaluated as being well- or ill-advised, conducive to certain ends, easy or difficult to administer. So one can order stances: as a strategy for reaching the summit, taking one step forward and two steps back is a very bad one» (Ganeri, 2017). In his analysis of knowledge from a Jaina perspective, Ganeri emphasizes the non-dogmatic approach towards adopting stances. In this perspective, it is possible to acknowledge the value of one way of interrogating reality while at the same time using an alternative path. Denying the value of alternative approaches and thinking of the own as the only correct is an act of epistemic violence (*himsā*) in Jaina philosophy. This attitude «is just to acknowledge that the ordering among stances is a partial one: some pairs of stances can be equally good, by the lights of the standard of goodness that stances are responsible to» (Ganeri, 2017). Fundamental to this attitude is rejecting the belief that things have a single, unique essence. That would imply that there is one best way of grasping this essence. Instead, reality and things are seen as manifold or multifaceted, with various accesses for describing and understanding them. This is how knowledges come into play. And as knowledge is basic to any educational endeavour, as stated earlier, multiplicity of educations follows. Apart from knowledge, such perspectives can be applied consequentially to various situations and phenomena, especially learning and teaching, and the view is widened rather than narrowed to e.g. a single right solution, or way of understanding. Accordingly, the question would be to prove that criteria for evaluating education are well or ill-advised (or for the standard of goodness, following Ganeri), and always in relation to the context in which this education is supposed to enable students to live meaningful lives.

To sum up, there is no evidence that such a thing as knowledge in terms of European-North-American thinking indeed exists in other cultures around the world. Any attempt to decolonialize knowledge or epistemologies must additionally consider that any recent dialogue will take place in a certain language, namely English, so European-North-American «categories take precedence in the dialogue and define the terrain of the dialogue» (Raina, 2009, p. 626). Knowledge has been defined as singular, decidable and truth-valued through European-North-American

lenses. This concept allows no contradiction and cannot deal with ambiguity and multiplicity. The estimation of singularity of knowledge is not only one of the main aspects and strategy of colonizing knowledge, but also an unnecessary limitation of the endeavour to search for knowledges.

2.2. Relational and psychological aspects of knowledge

As already mentioned, one characteristic of the views emerging in the Indian context discussed above is the tendency to include social and psychological components when considering the emergence of knowledge on all levels. Raina (2009) emphasises the analogies to postcolonial theories, stressing contextualization of knowledge production and *the socially embodied nature of scientific knowledge in general* (Latour, 1993). Gokhale taught us that Nagarjuna described mental constructs of language and thought despite their absolute or essential appearance of being relative, depending on something other than themselves. I will explore this emphasis of interdependency in Jaina concepts of knowledge now a little further. Other than European-North-American approaches that take knowledge or belief as dispositions, Indian epistemological theories talk primarily about cognitive episodes as being acceptable or otherwise. Referring to the well-known Indian scholar B. K. Matilal, Gokhale (2010b) points out that «the verbs “believe” and “known” do not refer to acts or episodes but to dispositions; to be more precise, “believe” is a tendentious verb and “know” is a capacity verb» (Gokhale, 2010b, p. 3). Using the example of becoming aware of a pot, the verb *jna* refers to the act of becoming aware or to an episode of recognizing a pot (Gokhale, 2010b, p. 3). What is not meant is a dispositional knowledge of a pot. This «concept of *jnana* in its *episodic form* is foundational to the whole of Indian epistemology», according to Gokhale, and «one has to be careful in reading western epistemological issues in the literature of Indian epistemology and vice versa» (Gokhale, 2010b, p. 3, accentuation IC). We see rather radically different conceptions of knowledge here, although some aspects can be found in the counterpart, as under certain circumstances Indian traditional writings know justified true cognition (with very specific way of justifying). On the other hand, the English, *coming to know*, can be treated as an event and therefore one can see parallels to the episodic notions of knowledge.

The concept of knowledge in episodic form and the act of coming to know leads to an analysis of this process. Obviously, perception plays a central role – the moment perception takes place is «coming to know». For Indian philosophers a basic concern was whether «perception was the only means of acquiring valid knowledge or whether inference was also a valid instrument for the acquisition of knowledge» (Raina, 2009, p. 624). Perception here does not map onto merely sensory perception however, but includes the perception of the self and its qualities (Raina, 2009, p. 624). In general, Indian traditions conceive the relationship between human psychology and logic or psychological aspects and knowledge quite differently than European-North-American tradition. This has been one main aspect of the debates between both traditions. As Indian thoughts included «so-called psychological elements (e.g. experience)» (Clemens & Biswas, 2018, p. 13), the status of logic was denied. Anti-psychologists did not tolerate the inclusion of

such psychological elements as part of logical reasoning, and in contrast a highly formal code of logical expression was developed, which has led e.g. to the extreme of pure mathematical philosophy. Consequently, alternative schools of thought from India constantly have to justify their status as logic (Clemens & Biswas, 2018, p. 13). In reference to *Nyaya* logic, Mohanty (1985) claims e.g. that psychologism is not necessarily anti-logical. On the contrary, he points out that it is questionable to accept logic as a universal fact when the relationality between cognition and logic is not taken into consideration (Mohanty, 1985). Indian schools of thought ask whether logic and knowledge are related to psychological and social aspects. Postmodern thinkers and science sociologists would surely confirm that.

Ganeri (2017) explains fundamental differences in epistemologies as he points out the distinction between epistemic principles (*pramāṇa*) and epistemic stances or stances (*nayas*), and that in Jaina tradition both are essential constituents of an epistemic culture. He explains further: «A *naya* is not a proposition but a practical attitude, a strategy or policy that guides enquiry: it is an approach to the problem of producing knowledge, not a proposition about the sources of justification. One such policy might be to attend only to what is immediately present in experience, another might be to enumerate everything one encounters without making any categorical distinctions, another to attend to stasis rather than flux, or to causal interconnections rather than to essential attributes» (Ganeri, 2017). Such different epistemic stances do not analyse a specific part of reality rather each one strives to examine the whole, but always in their own particular manner. There have been structural points of view as well as approaches to studying reality in terms of ontological categories, says Ganeri. Nevertheless, it «would be an error to dogmatically infer now that reality is only structure or that it is only category. Similarly, modern science is an epistemically plural undertaking, despite the official narrative. Science excels in producing descriptions of causal connections and providing for their explanation; but there are other ways to interrogate the reality we share» (Ganeri, 2017).

After the 1980s, the normative constitution of sciences was recognized in the discussions on science and knowledge. Science itself became an object of investigation in second-order disciplines, according to Raina (2009). This was the precondition for the sheer possibility of such a project as decolonization of knowledge and, depending on education, to start. Scientific knowledge, like anything else, is made by someone somewhere and not given, it emerges relationally in a given social context involving certain actors and can in turn be analysed and become the object of scientific research. «One such modern perspective is that of social epistemology that addresses the social dimensions of knowledge or rational belief. It is here that we find an axis of intersection between Western epistemology and its Indian counterpart. Social epistemology or social theory reflexively examines the conditions under which it theorizes about what counts as knowledge» (Raina, 2009, p. 626). In consequence, one has to analyse carefully the criteria for defining knowledge and see them in their social context as well. The social dimension of knowledge is an important factor in both Indian philosophy and the sociology of scientific knowledge (Raina, 2009, p. 624). Educational science can learn from these insights into the interrelationship between the social dimension and concepts such as knowledge or education. Not only for decolonizing education, but also to remain relevant for 21st

century realities, educational science must focus on multiplicity and social aspects of knowledge. Educational science must analyse the actual educational concepts used constantly in relation to the social formation in which they emerged, and whether they really are connected to today's social contexts. Otherwise, it risks delivering concepts and practices that have no connectivity to the diverse realities in which it operates today.

3. Consequences for education

So how does educational science react to the increasing awareness of multiplicity and the insights gained from focussing on the social dimension of knowledge production, concepts, and epistemological bases? Instead of welcoming the growing desire for multiplicity (Spiess & Seesemann, 2016) in the course of awareness of the social dimensions of epistemology, to which Raina (2009) referred in the above, educational sciences have been dominated by homogenization tendencies on the reflexive level as well as by practices in recent decades. This might be explained with the victory of belief in large-scale assessments and the magic bullet of «evidence». Once I promise evidenced-based knowledge for new governance to increase my power in the game and get prestige for my discipline, of course, I do not want to bother with multiplicity and knowledges. How does one then argue for universal testing and completion? We find references to diversity or multiplicity everywhere when it comes to describing actual societies and their various problems, phenomena, trends etc. Nevertheless it is interesting to note that in the educational field, although multiplicity is a top priority, and despite the various concepts of educational practices, education and knowledge themselves seem to be more or less singular. *One* education for all. Cultural contingencies are hidden. I stressed the necessity of a context (or culture) including approach in the educational sciences with regard to theoretical and epistemological concepts before (Clemens 2008, 2009b), discussing e.g. the so-called «German special way» (Sonderweg) in educational science as a form of indigeneity (Clemens, 2009a). But of course, if one follows an ideology of worldwide testing, a precondition is that there must be a single, universal, exclusive valid knowledge that can be tested anytime and anywhere. The entire test business is full of prerequisites for knowledge and its character, and not all are as obvious as it seems to the adepts. The first precondition for a test and a measurement is that knowledge is indeed objective and decidable in a two-valued logic. Otherwise, there can be no right and wrong, passing and failing. Secondly, knowledge needs a specific form – it must be testable. However, there are endless forms of thinkable knowledge that cannot be tested at all, let alone with a standardized test. And thirdly (to name only these, there are of course many more prerequisites e.g. that knowledge can be expressed in language, practised in time and within a certain framework, is repeatable, made visible, individual etc.), knowledge must be universal so it can be tested globally. From this perspective, the multiplicity of knowledges is a big problem for the discipline. As I said in the introduction, decolonization and importing multiplicity brings a lot of uncertainty. As all systems tend to cover ambiguity, contradictions and uncertainties (Luhmann, 1987), it is not surprising that educational sciences tend to ignore the perspective of *social*

epistemology (Raina, 2009) and multiplicity of knowledges and their definitions, as well as the consequences. But ignoring or covering ambiguity and multiplicity does not mean it will disappear, and to remain relevant and show connectivity to socially diverse contexts, educational science must rethink basis concepts such as knowledge. For the diverse futures students facing on this globe (Stambach & Hall, 2017), diverse educations based on diverse epistemological concepts are needed.

However, what does educational science gain from this epistemological decolonization outlined above, e.g. by rethinking the concept of knowledge and accepting alternative views about its definition and character? First of all, the two-valued system of thoughts, leading to singularity of knowledge and perspectives «can most probably not offer an efficient technology for the re-thinking of effective responses not only to the contemporary problem in the educational sector, but the systematically overheated (Eriksen, 2016) or hypercomplex contemporary world at large» (Clemens & Biswas, 2018, p. 12). Between two such poles lies a whole world of possibilities for thinking, combining, and taking alternative paths towards exploring the world of knowledge. As the social (and cognitive) relations become more and more complex in a globally connected world, thought systems have to answer this complexity with more elaborated concepts, too. Luhmann (1987) described this dynamic with his concept of structural coupling of social systems and semantics. Simplification and homogenization in turn will not be at all suitable for such challenges. Unambiguity and homogenization of perspectives do not help observe, let alone explain what is going on. William James (1996) already knew that, in general, conceptual «systems are monstrous abridgements but each is an equivalent for some partial aspect of the full perceptual reality» (James, 1996, p. 96). In consequence, different knowledge systems provide diverse outlooks on reality. Reductions cannot be avoided anyhow, as only parts of reality can be observed or perceived at any given time and in any space. Such abridgements are not avoidable but *constraints of comprehension*, according to Gary Fine (1991). Diverse epistemologies have a specific outlook. «There is no theory-neutral observation, description, interpretation, theorization, explanation or whatever. There is, in other words, no unmediated access to the world: access is always mediated. Whenever we reflect upon an entity, our sense data is always mediated by a pre-existing stock of conceptual resources which we use to interpret, make sense of and understand what is, and take appropriate action» (Fleetwood, 2004, p. 30). I would stretch this argument to knowledge concepts as well. Pre-existing stocks of understanding knowledge mediate what we observe and how, and what consequences we draw from that. Therefore, Weick e.g. as a scholar of organizing, requests *acts of differentiation* to point out overlooked differences. To follow him, the goal is not to harmonize, but to stress diversification. One of his other demands in line with these thoughts is for *acts of complication*. According to the author, it generates meaning «when the variety in present experience is made sensible by equivalent variety in conceptual substitutions» (Weick, 2016, p. 339), referring to Ashby (1958) and his *principle of requisite variety*. Adding more conceptual sensors increases the meaning of present experiences. An epistemological decolonization, therefore, would not only uncover some of the blind spots of European-North-American epistemologies, which are discussed extensively in the post-colonial debates, but would also add conceptual

sensors and increase the pool of meaning about present experiences. And as Husserl (1992) said: Who sees more is right.

Turning away from the two-valued logic system of knowledge means accepting a) multiplicity of ways (not to say: solutions) and b) the fact that things sometimes must remain undecidable, even though we saw with Ganeri (2017), that the existence of plurality of equally good approaches e.g. in Jaina thinking do not exclude an evaluation by some standards. However, standards and the order of stances must be discussed openly, and the criteria for standards might vary across social contexts and across time. What has connectivity in one social formation may fail in another or lose its connectivity due to changes in the social context over time. Conditions such as multiplicity and undecidedness call for actors who are able to cope with them and act competently in such circumstances. What is argued here on the level of epistemology has a long tradition of discussion about social reality in parts of the social sciences. In both spaces, actors are needed who can handle multiplicity and undecidedness. Again, we see the parallels of the emergence of knowledge in the everyday world and the science, the social aspect of any knowledge stressed above and e.g. in Indian thought traditions. In this regard, maybe epistemological decolonization requires quite similar processes than acting in everyday world in the «society of contingency». As Karl Weick (2016) says about acting in organizations in general: we «must act when we cannot foresee consequences; we must plan when we cannot know; we must organize when we cannot control» (Weick, 2016, p. 333). Training children in uniform tests to learn uniform answers to uniform questions will not help letting a competency emerge that can cope with these «musts» and «cannots» (Weick, 2016, p. 333). On the contrary, Weick describes his business such as «we still continue to conceptualize those three “cannots” (cannot foresee consequences or know or control) and those three “musts” (must act and plan and organize) in different ways. And we still try to *enrich those differences* despite the dampening rhetoric of “evidence-based” abridgements, aspirations toward settled science, and deep scepticism about counterintuitive proposals» (Weick, 2016, p. 333, accentuation IC).

But how can a researcher learn to act under the increased conditions of multiplicity and ambiguity without the seemingly clear two-valued logic, which has the undeniable attraction of dividing the world into right and wrong? What is to be done with multiple epistemologies that lead to diverse knowledges? Heinz von Foerster (1993) stresses in his reflections *lethology*, a theory of learning and knowledge in the face of indeterminability, undecidability and impossibility of knowing (von Foerster, 1993, p. 126) that only undecidable questions can be decided at all, and that the act of such decisions is associated with responsibility. Decidable questions are decided by the choice of the frame in which they are asked. The question whether 100 can be divided through 5 is decided through the frame of division rules and must be answered accordingly. It is a decidable question that is answered through its frame the moment it appears. In turn, the question whether there is life after death is again indefinite: as long as we live, we do not know it, and when a person dies, he/she cannot tell us. The answers to decidable questions are dictated by necessities. On the contrary, answers to undecidable questions are determined only through our *choices* for which we are responsible. It is a freedom to decide born out of force,

because we have to decide on undecidable questions. In the words of von Foerster (1993): «we are damned to be free» (1993, p. 126). However, this makes us aware of the contingency of our choices. Referring to multiplicity of epistemological bases, we too have to decide which ones should be the foundation of our scientific analyses and our concepts of knowledge. And once epistemological decolonization shows the contingency of what is defined as knowledge, we have to check the criteria for evaluating standards carefully, discussing possible ends and analysing which concepts are conductive.

The fact that something cannot be decided –e.g. whether it would be better for a maths teacher to teach division in the European-North-American way as a sort of serial process, e.g. as serial addition, or in Yoruba affine logic referring to the beauty of whole numbers (Verran, 2001)– must nevertheless not be seen as a drawback. This is true, if both methods and their epistemological bases are seen as equally valuable and the corresponding practices relevant to the phenomenon at hand. Decolonization of education at best can help to recognize this and to learn from such encounters. According to Verran, when different knowledge forms or logics come together like in the above example of the Yoruba idea of numbers and European-North-American logic regarding division, the consequences are «generative tensions» (Verran, 2001, p. 21). She points out that these generative tensions are a sign of creativity typical for collective life. Instead of a disadvantage, encounters of diverse knowledge forms and epistemological principles are sources of creative processes and the emergence of new positions, perspectives etc. This is exactly where the Indian philosopher Mohanty saw the main role of comparative philosophy. Similar to von Foerster (and maybe not just by chance), his thoughts lead him to write about freedom, too. Comparative philosophy, understood as a comparison of epistemologies and as the endeavour to see alternative epistemological enterprises as equally valuable, according to Mohanty «serves the important role of liberating philosophers from dogmatically inhabiting their own traditions and thereby of freeing philosophy itself» (Raina, 2009, p. 624). The aspiration then is to accept the right of knowledges to exist and to let us be «irritated» (Luhmann, 1987) by such multiplicity and differing concrete epistemological concepts and their consequences. As Helen Verran (2001) shows in her case studies, educational practices born out of encounters between diverse knowledge forms and epistemological principles can be extremely productive and enjoyable for all actors involved. A major challenge for the future will be to harness the challenge of multiplicity fruitfully on all levels of the educational system.

In that sense: somehow, I am finishing this text. Somehow, I do not finishing the text.

4. References

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