

Hard knowledge, soft values

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ABSTRACT The paper contrasts two domains of school education, natural science and citizenship education (as a paradigm of “hard” and “soft” subjects), with respect to their epistemological and ethical foundations. A sharp contrast between their associated world-views within the school community is accentuated at the outset. The epistemological shortcomings inherent in both are subsequently explored, and the debate between epistemological relativism and “naturalism” (a form of foundationalism) relating to scientific knowledge is briefly reviewed. Through review of organizational principles behind selection of knowledge for presentation in schools, values are introduced as an epistemically, as well as ethically, important component of school education. Subsequent analysis aims to show that even in this respect there are more similarities between the “soft” and “hard” subjects than is standardly assumed.

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1. “Hard” and “soft” in education

“[...] in its broadest sense, education is simply one aspect of socialization: it involves the acquisition of knowledge and the learning of skills. Whether intentionally or unintentionally, education often also helps to shape beliefs and moral values.” (Haralambos and Holborn, 2000: 774)

In 1993, Hirst charted the transition in his educational philosophy from the dominance of analytical philosophy and rationalism of the 1960s and 1970s towards the 1990s primary concern with social practices. This was partly due to realization that the former development of uniform rational individuals was detached from the real biological and psychological demands of human nature, as well as neglectful of the individuality of every student. The latter utilitarian ideal of maximising the overall personal satisfaction in the society sees rationality as a mere

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guide and not as a means in itself. Education, then, is more than an acquisition of knowledge; it is an initiation into rationally enhanced social practices to secure the most efficient satisfaction of wants. Propositional knowledge here is of great importance in securing the wide-reach and efficacy of beneficial practices, but is only a second order category built out of critical reflection on first order satisfaction of practical wants (Hirst, 1993).

In some areas of education (e.g. “soft” subjects such as citizenship education¹) explicit transmission of values may be of primary importance, and it is on them that the knowledge of each individual, marred by the lack of certainty, can rest and be evaluated. Whether or not this programme can indeed be successful in such subjects does not seem at first glance to be a route open for natural sciences education, as it should follow the aims of its practised discipline in being value-free.

According to the 20th century “standard” view, educational transmission of scientific knowledge is compelled to follow the canon of general scientific culture (Cooper calls this “naturalism”, and, though a rough sketch, it will serve for illustration here) that states that there is no more to the world than is depictable, in principle, by the natural sciences; that human beings are entirely natural elements within that world; that value and meaning are not entertained by natural scientific enquiry, they constitute no part of the world, but are “projected” onto it by us. Thus, an important ideal in education is that of the rational autonomy of mind, achievable (unparadoxically) through participation in public, criteria-governed modes of enquiry. The theoretical task in education, most notably natural sciences education, was to train the uninitiated mind in developing its rational autonomy to be applied to certain spheres of experience. (Cooper, 1998: 31–32)

Other than the obvious difference from the global universality of science and mathematics (though, there are arguments against this claim as well; cf. Lévy-Leblond, 2006), political knowledge (over and above some minimal propositional political theory) is much more malleable and dependent on the context of space and time.² It is also much more explicitly suffused with explicit value judge-

¹ “Hard” and “soft” subjects chosen for the purpose of this comparison (civics and natural science) are not absolutely given, and much of what is said about either or both is applicable to other school subjects as well. Perhaps what is characteristic about the chosen ones is that neither is seen as requiring any special talent, such as arts and literature or mathematics might be.

² For example, political knowledge transformation in education in England over the past decade or so has meant a shift from the subject “Civics” to “Citizenship”, introduced as a compulsory school subject at Key Stages 3 and 4 in 2002 (arguably altering the teaching and learning methodology as well, Doolan, 2003), whereas in Croatia this knowledge transformation has included a shift from the subject “Self management and the fundamentals

ments. Furthermore, public education (most directly subjects dealing with political education) impacts what is considered valid and relevant political knowledge in any given community.

2. "Hard" knowledge

A simple, but widely popular educational model (Bruner, 1996; Hirst, 1975; Winch, 1999) sees education as persistent gathering of propositional knowledge. Propositional is the "knowledge that", also known as theoretical or factual knowledge, "knowledge that p ", where p is a proposition expressing some fact or other. We are, therefore, expected to make sense of all experiences by subsuming them under knowledge that is in correspondence with reality, knowledge that consists of a canon of unshakeable propositions concerning that reality. By using the (alleged) "organ of reason", we arrange the said knowledge into a hierarchical structure that corresponds to the hierarchical structure of reality (both natural and social). This structure is directly reflected in education as well.

However, it takes a minor tremor underneath this elaborate network of direct connections between knowledge, reality and mind to cast doubts on the validity of an educational model focused solely on the gathering of propositional knowledge. Philosophically, we are not only in dire straits to provide a satisfactory model of truth that allows us to pick the appropriate factual propositions from a wealth of meaningful but untrue ones, but we also lack a satisfactory account of which instances of belief (something in the mind) are knowledge (and thus factually connected to the world) and which are not (while we can also ask whether knowledge contains belief at all). Furthermore, even if a canon of true propositions is constructed, not all are equally worth knowing and learning, so a selection must be made regarding their presentation and curricular organisation. Under a further assumption that the supposed body of knowledge is directly influenced by what is taught at schools, such as is placed before the model of political knowledge above, these issues gain additional importance.

Moreover, we have to be able to differentiate the utterance "Paris is now the capital of France" by a geography teacher conducting a lesson about France, from the same utterance by an actor who has never heard of France whilst performing a play containing the said line. We expect that a person knows that p only if he or she can differentiate the truth of that p from its relevant alternatives (Goldman,

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of Marxism" to "Politics and Economics" (arguably changing the content of propositional knowledge transmitted, though not the teaching methodology) that took place in 1992. . Interestingly, in both cases, one could argue that the transformations to the subject were wrought by political changes. Namely, in England, the Labour Party won the elections in 1997, whilst Croatia's independence in 1991 meant a shift from a socialist to a democratic system of governance.

1976),³ i.e. appropriation of knowledge is not demonstrated (e.g. in school assessment) through mere imitation (this point will be raised again in the case of procedural knowledge).

Traditional conceptual analysis of propositional knowledge, from Plato onwards, has mostly demanded that knowledge should entail truth and that it should not be accidentally acquired, i.e. that it should be reduced to a *justified true belief* (the so-called tripartite analysis: knowledge = truth+belief+justification). What can and how it can be admitted as appropriate justification in the said analyses is the crux of a longstanding debate. It can be said that 20th century epistemology has been dedicated, but without success in the form of a consensus, to refinement and extension of the tripartite analysis. Still, for every analysis there seemed to be an intuitively appealing⁴ counter-example showing it to be inadequate to differentiate all knowledge from non-knowledge. In the end, the very justifiability of analysis is brought into question by proposing that knowledge is a primary state that cannot be reduced to more basic constituents (Williamson, 2000: 1).

But a (loosely called) postmodern critique aims to move away from the attempts to find normative proscriptions about the possibility of knowledge towards denial of status to what we would normally like to consider knowledge. The postmodernists wish to warn all those that “produce” knowledge that all that is said and written is forever susceptible to denial, alternation and the politics of the community in which it exists (Ward, 1996: 33). This is especially geared towards the crumbling of the academic hegemony of science, towards perpetual warning of epistemic relativism and problems of representation of experience, in order to weaken the monopoly of one discipline over access to truth. Thus, in our search for the bare minimum of knowledge that satisfies the conditions set by different analyses, we have come increasingly close to attributing the status of knowledge to individual beliefs dependent on the contexts in which they arise and in which they are assessed for validity. Whereas such a conclusion is almost readily accepted for a large part of political knowledge, the accompanying debate in the

³ Of course, the issue of determination of relevant alternatives remains, and cannot be addressed here. Briefly, such an alternative is where the cause of belief that *p* is partially altered whilst the surrounding physical context remains the same. But, in education, students often approach given situations with a ready-made view of the context, and in many cases the task of education is not only to convince the students that *p* is true, but also to place *p* in a new context. For example, the Earth’s rotation around the Sun is perceptually identical to the Sun’s rotation around the Earth (as viewed from an everyday Earth-bound perspective). The causes of both beliefs are perceptually indistinguishable. What differentiates them is the remaining physical context that the students are to be introduced to, i.e. the planets of the Solar system, planetary mechanics etc.

⁴ A striking feature of propositional knowledge seems to be that, despite having been unable to formulate a satisfactory analysis for centuries, we can intuitively tell whether proposed counter-examples are or are not instances of knowledge.

sciences will illustrate the nuances of searching for a solid (even if narrow) foundation of knowledge, and its connection to understanding of value.

Ryle's development of the analysis of procedural knowledge, and general raising of awareness about its significance within analytical epistemology, is based on the drive to defeat the Cartesian illusion that our mental life consists solely of the search for answers to theoretical questions, conducted internally/silently (Ryle, 1949:I). Ryle says that in education, as well as in everyday life, skills (both practical and intellectual) are much more important than individual cognitive repertoires. In life, activities that people perform are much more important than the truths they learn. Indeed, Ryle says, learned action is not the side effect of theorising, but theorising is an activity that can be performed in a learned or ignorant manner (Ryle, 1949: II). In fact, in education, we often protest someone's ignorance of the fact merely for the foolishness of which such ignorance is a consequence.

But what is the essence of the knowledge of how to do something, such as using grammatical speech, chess playing, fishing or debating? Part of it is the successful performance of these actions. However, this is an insufficient part for the whole know-how. A well-adjusted clock and the well-trained circus seal can effortlessly perform certain operations, but we would not say that they know how to show time and balance a ball on their nose, respectively. Knowing how to do something does not consist solely of the satisfactory execution of an action, according to some set of criteria, but also in voluntary application of those criteria.

An action is considered carefully executed, crafty or successful if the performer is capable of detection and correction of mistakes, repetition and improvement of the successful performance, learning from the example of others etc. Such a person applies criteria in a critical performance, i.e. in a voluntary attempt to execute a good performance. We are prone to pronounce that such a person thinks what he/she is doing. However, Ryle warns that this should not be used as an excuse to try to reduce the procedural to propositional knowledge (by claiming that a successful performance must be founded on the cognitive articulation of the propositions that guide/describe the action).

Such a reduction would make procedural knowledge an extension of propositional knowledge. A *reductio ad absurdum* of description of cases of successful procedural knowledge instantiation can be used to show this is not the case: master chefs do not recite the lines of recipes in their head whilst cooking, the lifeguards do not restate the moral imperative or the terms of contract of employment before swimming out to save the drowning individual etc. There are also numerous instances of successful know-how performances for which it is not easy, if it is at all possible, to formulate the propositional rules and criteria. A good comedian would be at loss to explicate the exact rules that guide him through the writing and telling of good jokes, even though he can demonstrate that he knows how to tell a good joke and knows how to recognise a bad one.

Ryle's analysis, therefore, runs into trouble in setting the explicit (propositional) criteria that differentiate procedural knowledge from successful imitation/theatrical performance. After abandoning the 'internally' elaborated theoretical foundation of successful performance as a guarantee of procedural knowledge possession, Ryle fails to say what it is within/about the performance or the performer that makes the successful performance of an action different from crafty imitation of a successful performance of a given process (except for the still ambiguous dictum that a performer ought to be 'thinking what he/she is doing'). We are left with a Wittgensteinian solution (Wittgenstein, 1967) of relying on the context: standards set by the community or culture of the performer; but do not get much clearer about selection of suitable procedural knowledge to be transmitted through education, nor the methodology of transmission that would ensure appropriation of procedural knowledge and not mere successful displays of its imitation. Both types of knowledge are cornered by analytical demands for deconstruction of absolutist pictures often presented in schools, and appreciation of epistemological relativism (the role of community and social practice in conceptions of knowledge).

3. How "hard" is science?

Proponents of "naturalism" could still claim that the knowledge associated with their world-view is capable to transcend its community-based origins in the ways that political knowledge cannot. This is in line with Carnap's (1967) positivistic programme of unification of language and laws of all sciences and their foundation in the simplest (a.k.a. unshakable) observation-statements of our language (corresponding to some of our foundational experiences). Though such positivist aspirations have subsequently been abandoned, their applicability in education is not to be neglected. After all, students can see that steam rises from boiling water or that balls accelerate when rolling downhill. In the light of Hirst's "social practices initiation" (Hirst, 1993) we might want to argue that the "naturalist" world-view (though, of its own admission, aiming to be value-free) incorporates the most universal and, in at least some domains of experience, beneficial social practice available today. Though initiation into social practices focused on the development of individuals is not founded solely upon transmission of theoretical scientific knowledge, such knowledge, as enshrined in the Western scientific practice, will prove to be of the most universal benefit. Jean-Marc Lévy-Leblond (2006) argues that even if that may be so it is not because of some necessarily universal validity of Western science, but solely due to the contingent fact of its contemporary dominance in global social practices. He bases such claim both on the overview of alternative, and in their own context, successful scientific practices through history, as well as the claim that some cultures have achieved dominance despite turning their back on scientific development (most notably Ancient Rome) (Lévy-Leblond, 2006:28; also Hodson, 1998:204). Accepting some such argument, we may still legitimise initiation into scientific social practice (sadly leaving that term in itself insufficiently explored,

save for Cooper's summary above), but not for the reasons such practice ascribes to itself.

Such criticism can be further used to legitimise the abandonment of the "naturalist" methodology in education as a whole as it cannot guarantee the provision of sufficiently broad understanding of experience, for it deliberately leaves out an important segment of it (the value-based aspect). This acknowledges the failure of scientific attempts to strip the knowledge-gathering of all inessential disturbances and thus "speak the language of the world". "Relativist"⁵ critique demands that such thoroughgoing aim be abandoned (to a varying degree depending on how radical the authors are) based on two "philosophical" theses: (1) that there is no mechanical recipe for obtaining knowledge (based on the problem of satisfactory analysis of knowledge in epistemology and philosophy of science), and (2) that no decision can be made between competing explanatory conceptual schemes (leading to a form of epistemological and ontological relativism) (Luntley, 1995). As humans we do not seem to have universal access to truth over and above the reasons, proofs and justifications to which we explicitly assent.

"Naturalism" can, on the other hand, accept that all processes of knowledge production and codification are social ("cultural") and as such bear the marks of their context of production. Once we accept that all knowledge is social in character, then this very fact stops being the demarcation criterion used in evaluation of knowledge. But the fact that all knowledge is socially produced does not mean that all knowledge is epistemologically (philosophically, theoretically) the same. For there is a crucial difference between production of knowledge and its *emergent properties*, we must see that even though socially produced, knowledge has the power to *transcend* the conditions under which it has been created (Moore, 2000). Thus different knowledge can have different not-socially-constructed value (along some widely-applicable scale) associated with it. Such legitimisation of scientific knowledge can be used to bear on the questions of the role of the associated world-view in educational practice. If such universal applicability of values can be achieved, then scientific world-view may as yet rule the roost.

Bear in mind, though, that the "relativists" have not proven (according to the above sketch, they have not even tried as much) that the true states of affairs do not exist. Their criticism of knowledge rests on a claim that such states of affairs are not directly and inherently accessible to human enquiry. Though history of philosophy and science warn us that the ways in which we conceptualise the world, what we ground our experiences in, can be susceptible to human fleeting

⁵ This is just a sketch-name for purposes of illustration. It is hard to group so many different positions under one umbrella, and throughout this text the term is used to cover such schools/positions as of postmodernists, hermeneutics, constructivists and the like.

interests, it is still reasonable⁶ to assume that whether these conceptualisations are correct or not, whether they are true or false, depends primarily not on how we are inclined to construct them but on *the state of affairs in the real world* (cf. Carr, 2003: 130).⁷ This is an unavoidable constriction in every construction of knowledge, and a concept of “value” that respects what could provide the grounding for cross-cultural applicability of the “naturalist” world-view in at least some domains of experience. Alternatively, perhaps the said constriction can provide the criteria of evaluation to adjudicate the worth of different segments of knowledge or pretenders to the title.

A more detailed examination of the “naturalist” canon above may allow for its modification that combines the epistemological “fallibilism” with ontological realism, and gives some idea of the specific concept of value that is rooted in ‘naturalist culture’. There are limitations placed on knowledge by the independently existing reality though that knowledge itself is, at least in part, socially constructed (Smith and Hodkinson, 2002).⁸ Just as we are not in everyday life the fully rational creatures idealised by the “naturalist” picture, so the great technological advances based on contemporary science and used in the everyday life of most cultures today cannot be attributed solely to chance or radical social constructivism, and the *novel predictions* of phenomena arising from contemporary science are unparalleled in their reliability by other cultural practices operating in the same domain of experience. Paraphrasing Goldman’s more technical account, scientific practices are more reliable predictors of interaction with the external world than any set of non-scientific practices available to human beings in answering the sorts of questions that science seeks to answer (Goldman,

⁶ Of course, relativists may cry foul here, and claim that what we may find reasonable or unreasonable is not universal but a product of our social and historical context. In a possible parallel context then it may not be at all reasonable to assume that the correctness of our conceptualisations of the world depends on some ideally objective and real state of affairs, but on the whim of some omnipotent being, the workings of the reality-generating deception machine or some such factor. Even this much may be conceded here, providing we keep in mind that none of our friends or foes, no member of our, or any other community we may come to interact with, is or can be such an omnipotent being or machine. The issue is not whether we are mistaken, or even deliberately deceived, about the detailed structure of some independent reality, but whether such a reality, as independent of our actions and will, does or does not exist.

⁷ According to Carr the fallacious blurring of the distinction between truth and judgement is to blame for consequential epistemic relativism (*ibid.*).

⁸ Furthermore, and this is especially important for science education, we have to be aware of a difference between knowledge as fact and knowledge as explanation of the given fact (Carr, 2003:129). The two are seldom interchangeable for they may carry a vastly different deal of conviction (a fact may be objectively accepted and verified, though its explanation may not be). Within scientific world-view there is currently a varying degree of success in provision of explanation. Thus, the hard-to-defend examples need not carry conviction against the whole enterprise.

1999:247). But in the educational context, a sociologically motivated fact that scientific research and utilization of its products are not value-free cannot be ignored (Hodson, 1998:203).

On the other hand, it is frivolous to lump all relativist critique in the band of vulgar relativism ascribing all interpretations of sensory experience to a contingent set of social conventions. Serious relativist critique does not advocate an “anything goes” scenario, but merely demands that we abandon the false hope of reading the cosmic register of truths (now and for ever in the future). We are still free to make judgements and prefer some things to other, and will continue to do so. But they warn of a circle in naturalist reasoning (a circle that may or may not be vicious): to know the true state of affairs we must have a procedure distinguishing true from false appearances, to know that the said procedure is reliable we must know that it is successful in distinguishing the true from false appearances, but to know the latter we must already know (via some other method) which appearances are true and which are false (i.e. know what the true state of affairs is) (Smith and Hodkinson, 2002: 293, attributing the precise formulation to Chisholm, 1973). Similarly, Kukla and Walmsley, 2004, argue that the “explanatoriness” provided by science cannot be used as value in any argument that seeks to establish the values behind belief in scientific claims. Thus, we cannot too easily smuggle in some sort of value foundationalism to replace the epistemic one, but could perhaps offer different evaluative criteria for different stages of the supposed circle.

4. Organization of knowledge in education

“[...] from the vast universe of possible knowledge, only some knowledge gets to be official knowledge, gets to be declared as legitimate!” (Apple, 1999)

Having identified some of the issues that plague knowledge and skills in general (and thus affect their subsequent transformations), how do we represent each in educational transmission? According to what “value” (intrinsic, instrumental, and culturally conventional) should the selection be performed? Furthermore, how and who combines them into a unified whole, a curricular body of knowledge? Given the doubts about its certainty, is it the “hard” or the “soft” subjects that should provide paradigms in educational transmission?

On one side there are those who claim that, at least in some fields of experience, there are directly accessible facts, for which it is possible to prove as much. So it is claimed that at least in those fields we have come across the unshakeable body of propositional knowledge, on which to hinge our more tentative beliefs. Thus, the “rationalists” claim that even though our senses are deceptive, by relying on rational thinking (which is akin to use of the “organ of reason”) we can come to know the unchangeable truth. In this way, a group of allegedly intellectually su-

perior subjects (e.g. logic and mathematics) becomes the educational paradigm guiding all other knowledge acquisition. Thus, it was taken that the study of formal logic can aid the development of the rational mind and thus positively influence social and political life.⁹ This, however, turned out to be an empirically unsupported assumption, as George and Gandhi (2005) show through a series of examples of fine logicians and evil men. Moreover, since the 19th century and the development of alternative geometries, the certainty in logical and mathematical systems has been shaken through the introduction of the alternative systems to those that the rationalists praised as the paradigm of absolutely certain knowledge.

With regards to the issue of primacy of scientific education, Cooper maintains that the opinions of US Pragmatists (James, Dewey, Putnam) ought to be instructive: when deciding between whole philosophical standpoints, questions of value legitimately intervene. Thus, all such standpoints that can be shown to reinforce “a bad culture” should be abandoned “and only an artificial dichotomy between ethics and epistemology prevents people from recognizing this” (Cooper, 1998: 36). Cooper uses this to conclude that since the ‘naturalist’ world-view offers no guide through “the experience of rightness and wrongness, Š...Ć, the significance or insignificance of what there is in the world”, and yet those are some of the essential components of our culture, of our everyday lives even, it deserves to be abandoned in the wake of a “reflection on a pre-theoretical experience of the ‘lived world’” (Cooper, 1998:38).¹⁰

The primary role in education is then taken by the subjects based on phenomenal and experiential approach to the world (including the empirical dimension in sciences). However, even in philosophy of science such hard-boiled empiricism had to be abandoned under Popper’s criticism that the ideal empirical proof is unattainable, the best that we can in any case hope for being the temporary corroboration of a theory. Furthermore, to be able to bring the educational process to some level of conclusion we need directly to transmit some of the ready-made hypotheses about the world, as well as to direct any individual investigation in search for the right clues. In that, we already heavily rely on language (as the universal categorising code of the community), thus transmitting the non-empirical categorisation that a student is forced to accept *tout court*. Finally, just as was the case with immutable rational systems, the history of empirical sciences has shown them vulnerable to radical change of theoretical systems, thus completing the circle of denying immutable certainty to knowledge gained through empirical

⁹ Supposedly, Rudolf Carnap and Ernst Nagel supported Lillian Lieber’s intent to prevent the occurrence of another world war through the study of formal logic (George and Gandhi, 2005: 32).

¹⁰ This is not to say that the legitimacy of scientific knowledge is denied altogether, it is also not an argument against teaching science in schools. It merely advocates that such education be confined to an enclosed niche within the educational system.

observation (cf. general criticism by Popper, 1963; reconstructed in the educational context in Moore, 2000).

More recent, “postmodernist” educational philosophy denies that it has ever been possible to either ground knowledge in an absolutist or naturalist comprehension of reality or to secure it by some immutable methodology. All knowledge is and always has been, regardless of its ontological status or methodological source, modified by language and interpretation. As such it is a product of a community, and is imposed on the unsuspecting individual as “the truth” through curricular selection. Admittedly, it is an achievement of (though not exclusively) the “new sociology of education” to point out the importance of the social aspects of knowledge production, some of which have an adverse influence, which can be further complicated through the organisation of knowledge in the school curriculum (Young, 1998).

5. How “soft” is political education?

“Assuming [...] that education should do something to afford a training [...], the question arises whether education should train good individuals or good citizens. [...] whatever view may be taken, it is difficult to deny that the cultivation of the individual and the training of the citizen are different things.” (Russell, 1932: 1)

The position of political knowledge is especially acute here as, more than any other aspect of the curriculum, education in politics and citizenship eventually affects the political knowledge within a community.¹¹ Recently, for example, it has been explicitly stated that the school curricula are not pure theoretical constructs, but have a social role to perform as well through the contribution to the developmental needs of national economies (Standish, 2003; Flego et al., 2004: 21). An alternative to such social conditioning would be to allow each individual to pick and choose what they see fit from the collage of the “socially constructed body of knowledge”. But pick and choose according to which criteria? Values that an individual student adheres to (says White in 1995), if only those were to precede theoretical (and expert practical) knowledge appropriation.

In the case of political knowledge, an important additional component is provided by values, either explicitly stated, or implicitly incorporated into the factual structure. Thus, on one extreme view, all the relevant and universally applicable values are included in the structure of the political system (this includes the constitutional documents) and stand “behind” the knowledge of the theoretical operations of the political system (of the relevant community), so education merely

¹¹ There is no room here to get into discussions of educational outcomes of selected curricular context. For some general results not focused on political knowledge cf. Moore, 2000.

has to provide an introduction to the institutional practices of the State (including the minimum procedural knowledge required). On the other extreme, children (future citizens) should not be saddled with the communal practices in existence now (as those are imperfect), but should be provided the full capacity of creating their own means of public co-existence that must be constructed and practised on the spot, under mere considerate guidance (but not instruction) from the teachers (Giarelli, 1995).

Both extremes face problems. The former perpetuates the existing political system, the existing arrangement of the community, with all its inadequacies, and offers no scope to young citizens for autonomous individual development (which should be a guaranteed freedom) in the political sphere. It is thus open to criticism (again from standpoint theories) that it commits the state schooling system to perpetuation and legitimation of the knowledge and values that serve to preserve the interests of the ruling class (and to secure the reproduction of the dominant means of production). This sort of criticism often puts forth the statement that knowledge (especially when related to the political sphere) is never theory-free and neutral (such as is the supposed ideal of scientific knowledge) and that this is never elucidated in its curricular presentation (Harris, 1995). The latter, on the other hand, is almost entirely open to repeating all the mistakes of the past, thus allowing student communities to go through stages of fascism or slavery-based society, before potentially settling (if ever, cf. Williams' criticism of the teleological assumption about social development, Williams: 2003) for a more liberal and democratic structure. It is not clear how much considerate guidance from the teachers is allowed here before the consequences become dire for at least some groups of students.

The middle ground between the two extremes seems to lie in admitting the need for as much 'hands on' experience as possible in the transmission of political knowledge within the confines of the relevant society and culture as such, thus encouraging active citizen participation over and above the often dry propositional knowledge about the theoretical operations of the political system. In this way, Hirst's call for social initiation through education is heeded in the obviously acute case of political knowledge (Hirst, 1993). But in order to legitimise such knowledge (both in transmission from teacher to student, and in the construct the students end up with) there is a need for a set of values appropriated by each student (this is a temporal as well as a conceptual precedent) upon which the obviously uncertain and often impermanent knowledge may rest. This should allow everyone to weed out some of the imperfections from such knowledge, and thus provide individual control of knowledge through values (White, 1995). But this middle ground rests on an assumption that there is a universally acceptable distillate of values that are appropriate for all humans and whose appropriation by students does not represent indoctrination of the style criticised above.

And this assumption is getting harder to justify in contemporary western societies committed to value pluralism, as the condition they end up providing practically

spells the end of political (and moral) education through extreme relativism that is damaging to the individual, rather than liberating. On the other hand, the pluralistic view is not a product of a political whim, but is a fact about contemporary society, as well as a product of applying reason to the conduct of daily life. Namely, it is desirable to instil in students (for, among others, reasons outlined above) a set of values and show them that morality in general is more than an arbitrary choice between conflicting alternatives. But reasonably it is hard, if at all possible, to justify a choice of any given set over and above the said alternatives (Mendus, 1998).

6. "Soft" values

Joseph Raz in (2003) proposes an explication of the concept of value that aims to escape the thesis of social relativism whilst respecting the contemporary rational call for value pluralism. He claims to have opened the route for reconciling the objectivity (of existence) of values with their fluidity and sensitivity to social practices, to shared understanding and shared meanings. The objectivity (contrary to the claims of Cooper's naturalist) is reflected in the fixed and factual point of reference provided by the real-life social practices.

Raz argues that all values (some directly, and others indirectly) "exist only if there are (or were) social practices sustaining them" (Raz, 2003: 19). Social practices are necessary to bring values about, in the sense of providing a point of recognition of value that subsequently continues to exist without the associated social practice, but also enables one to use it in evaluative judgements both retroactively (thus to times before the "point of introduction") and globally (to societies that have not themselves instantiated the respective social practice). In this way, his concept of value differs from relativism in allowing for a comparison of values beyond the social groups that instantiate the sustaining social practice (SSP), and by making values metaphysically stronger than a convention.

He advocates the use of value judgements, or evaluations, with reference to "genre" or perspective explicated by the context of the social practice engendering a given value. He aims in this manner to allow for implementable value pluralism that respects that there are many distinct values (that are not all manifestations of one and the same goodness) and that some of those values may be incompatible (i.e. that they cannot all be realised in the life of a single individual or society). Of particular interest for education is that Raz is keen to reduce the extent of possible evaluative knowledge, whilst arguing for the very possibility of some evaluative knowledge. In his words: "we can know something, but less than is sometimes imagined" (Raz, 2003: 58). Needless to say this position has direct parallels with the straightforwardly epistemological discussion above. Raz claims that "since many value judgements are genre-based, they allow for knowledge, based on the defining standards of the genre, and avoid contradiction [with judgements from another genre], since different objects that belong to different kinds can be judged by otherwise contradictory standards" (ibid.).

But is Raz's thesis (his explication of the concept of value) sufficient for the provision of selection of values, or even value-genres, for transmission through education, given that education is part of a wider social practice? Again, in contemporary multicultural societies, which (at least) aim to replace many of their founding myths with rational justification, what are the social practices to be selected as engendering suitable values, whilst respecting the *multicultural* backgrounds of their citizens and pupils? Even Raz seems defeatist on the first issue, calling for a clarification of limitations on rational justification (Raz, 2003a). He is inclined to agree with the point made by one of his critics "that reason is incapable of ever resolving the dispute in favour of one side or the other (that the matter is therefore essentially a political contestation, a struggle for power)" (Pippin, 2003: 101), whilst maintaining that the conceptual explication he provides helps make the route towards a temporary resolution more transparent. And indeed, just as is the case with purely epistemological disputes, a step towards resolution, or reconciliation between disputants, is taken by transparent presentation of the strengths and weaknesses of both sides. But reason alone will not be the judge, and we will be better prepared for the verdict the sooner we realise this.

Bernard Williams takes this lesson further in his criticism of Raz's thesis (Williams, 2003: 117). He says that value pluralism is a thesis about values, not in itself a political or ethical ideal. It is a simple factual claim that contemporary societies (in the Western hemisphere at least) are conscious of value pluralism, are conscious of the rational under-determination of values espoused in their midst. Williams claims that once such consciousness is achieved there is no "going back" without explicit trampling of highly general values. But without some erroneous teleological assumption about the "evolution" of human societies towards increasing self-consciousness, there is no way of ranking pluralist societies higher than non-pluralist ones. This means that Raz's thesis, and its attempted separation from social relativism, should not even be expected to provide a *justification* for the way contemporary societies deal with evaluative judgements, or the very concept of value. Williams urges us to use Raz's thesis to see that historical and evaluative enquiry into our own values are not entirely separate from one another, and to drop the accompanying talk of the *existence* of values. But he permits the use of Raz's elaborate explication to enlighten many other issues we encounter in relation to values. Whether values *exist* or not, Raz's explication allows us some rational justification for presenting value hierarchies limited to our own "back yard".

Both political knowledge and that of natural sciences can be illustrative in denying Raz's thesis its metaphysical (though not instrumental) status. If human interaction with the world has the veristic aim elevated to explicit value in natural sciences, then what metaphysical gain is provided by the explicit introduction of such value through the sustaining social practice (i.e. some ideal scientific practice)? Namely, nothing changed in the worth of truth-seeking (seen here as respecting some externalist constrictions on knowledge, not as tapping into the "cosmic register of truths") as aligning with the real world with the introduction

of social practice that presents the understanding of its true nature. If, on the other hand, truth-seeking was always valuable and the social practice that is explicit about valuing it merely brings wider social recognition of its inherent value, then Raz's thesis does not provide anything more than relativism already does. For, however metaphysically strong the existence of some value is (such as truth-seeking may be), on Raz's thesis that strength is irrelevant to any human society until some social practice brings it to the fore, just like a convention does not functionally exist until some social group makes it their convention (they do not need to provide an assent for this).

The situation is reversed with political knowledge. There, we are not prone to saying that associated values always existed as values. Most, or all of them, were imbued with value through some social processes (sometimes backed up by rational considerations, other times by what we now see as myth-making), and it is a matter of fact that in other times or in other societies they are not values (though they may still be values from our perspective). Truth-seeking (though this does not mean solely the kind of truth-seeking encoded in modern science) did not become a value when humans decided to be practically devoted to it, because it was always the case that anything other than truth-seeking (in whatever convoluted shape) was to put one at odds with reality. But liberal social values characteristic of contemporary societies were not 'valued' in the past ones; that is a historical fact.¹² So those societies must have been either blind or inherently mean (i.e. bent on pursuing what is not of value). But pluralism alone precludes us from ever delivering such a verdict, whilst the metaphysical demand for existence of values calls for it.

Probably the best reconciliatory route is to embrace some form of relativism, and be explicitly conscious of this fact. We cannot indeed make the school value-free (thus opening the way for most vulgar value-relativism supplied through other means, an "anything goes" scenario), but should not make it stick to immutably imposed value-sets either. Rationally guided (though not rationally hierarchically organised) exposition to a range of value-sets and accompanying social practices is the best that can be achieved aiming for maximum coexistence (as Raz's genre-based evaluations seem to allow), whilst being aware of Isaiah Berlin's warning that in any political decision (in this case one that sets the outer limits of the value-sets) there are inevitable value losses. Explicit awareness of values held by an individual, and their explicit confrontation through the genre-based approach advocated by Raz, could help strengthen (up to a point, and differently in different cases) individuals' knowledge aspirations when faced with the lack of externally provided certainty.

So far so good for social values incorporated in political education. But, as has already been stressed above, there are difficulties with translating such a model of

¹² What is more pressing for education today, they are not "valued" in many of the present ones.

“individual certainty procurement” directly into school science subjects, though there are some lessons that can be learnt. It seems that it is important to teach about science alongside of teaching science itself (cf. Hodson, 1998: 209–210).¹³ This may allow us to escape from undesired epistemological relativism into seemingly less problematic ethical relativism: science, like any other social practice, has its own set of values which are most appropriate to its limited aims (and for the purposes of contemporary education those can in fact be limited) and which allow every individual student to ground the knowledge appropriate upon the tentative adoption of those values. One such value-related attitude to science is given by Goldman’s comparative scientific superiority mentioned above: scientific practices are *better* at handling their tasks than any set of non-scientific practices available. Moreover, though criticism of this worth focuses on “philosophically abstruse questions about theoretical frameworks or referential success” (Goldman, 1999: 250), the strength of scientific superiority¹⁴ lies in simple and obvious kinds of knowledge (such as plainly observable predictions) understandable to everyone.

Philosophically, both the “hard” and the “soft” subjects suffer from similar epistemological and ethical ailments (as do their respective social disciplines). Epistemologically, lack of certainty demanded by contemporary critiques of academic hegemony of certain disciplines and mandated by contemporary analyses of knowledge, makes the role of community in legitimation of knowledge more transparent than has been the case a century ago. Though this is not as extensive in sciences as it is in political education, the selection of knowledge for curricular presentation can bring to the fore a disproportional amount of instances of such knowledge (through teaching of general theoretical frameworks and striving for explanatory unification).

Ethically, the general theory of values struggles to find a universal distillate of values applicable across social practices and cultures, so as to respect pluralism without giving in to relativism. Again, despite differences between what is valued in sciences and politics, relativistic attitudes are hard to avoid in both disciplines. Whilst the values of sciences (avoidance of extreme epistemic disagreements between human conceptions and “the state of affairs in the world”) apply to a limited genre only, the values behind political knowledge cannot be rationally ordered in importance disregarding the social and historical context. Metaphysical theses about the existence of values merely detract from the importance of trans-

¹³ Though, we must also bear in mind Hodson’s methodological aspects of this general proposal: “[...] I recognise that telling students, too early, that scientific inquiry is context-dependent and idiosyncratic could be puzzling, frustrating and even off-putting.” (Hodson, 1998:210).

¹⁴ This is superiority of non-scientific disciplines competing with science for explanation of the same phenomena, and not all other possible disciplines available to humans. Thus, we are not talking of the conflict between naturalism and relativism here.

parent recognition, both in the case of what is valued in science education and what is valued in political education, of social influences on the formation of value-sets called upon in legitimation of uncertain knowledge.

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Hard knowledge, soft values

Sažetak

Rad uspoređuje dva područja školskog obrazovanja (kao paradigme “tvrdih” i “mekih” predmeta), prirodne znanosti i odgoj za građanstvo (popularnije, “političko obrazovanje”), obzirom na njihove epistemološke i moralne temelje. Na početku je izražen kontrast između svjetonazora implicitnih u spomenuta dva predmeta unutar školske zajednice. Potom se istražuju epistemološki problemi zajednički obama predmetima, te se daje pregled rasprave između epistemološkog relativizma i “naturalizma” (koji je oblik fundacionalizma) vezane uz znanje u prirodnim znanostima. Kroz pregled općih filozofijskih načela u pozadini izbora sadržaja za školske predmete, uvodi se pitanje vrijednosti kao i epistemički i etički važnog aspekta školskog obrazovanja. Analiza koja se na to nadovezuje nastoji pokazati da čak i u ovom pogledu postoji više sličnosti između “mekih” i “tvrdih” predmeta nego se standardno pretpostavlja.

Ključne riječi: prirodne znanosti, odgoj za građanstvo, naturalizam, relativizam, znanje, vrijednosti

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Hard knowledge, soft values

Résumé

Cette étude compare deux domaines de l'enseignement scolaire (comme paradigmes des disciplines "dures" "hard" et "molles" "soft"), les sciences naturelles et l'éducation pour la population (plus populaire, "éducation politique"), compte tenu de leurs principes épistémologiques et moraux. Au début est exprimé le contraste entre les conceptions idéologiques implicites dans les deux disciplines mentionnées au sein de la communauté scolaire. Puis font l'objet de recherches les problèmes épistémologiques communs aux deux disciplines, et est présenté un aperçu de l'étude entre le relativisme épistémologique et le "naturalisme" (qui est une forme du fondationalisme), liée aux connaissances dans le domaine des sciences naturelles. A travers l'aperçu des principes philosophiques généraux, à l'arrière-plan du choix des sujets pour les disciplines scolaires, est introduite la question des valeurs en tant qu'aspect important, épistologiquement et éthiquement, de l'enseignement scolaire. L'analyse qui s'y rattache s'efforce de montrer que même à ce point de vue il existe plus de ressemblances entre les disciplines "molles" "soft" et "dures" "hard" que cela est supposé habituellement.

Mots-clés: Sciences naturelles, éducation pour la population, naturalisme, relativisme, connaissances, valeurs

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