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Working Paper

Equal opportunity in educational contexts: Comparing the feasibility of divergent conceptualizations

The Constitutional Economics Network Working Papers, No. 02-2011

Provided in Cooperation with:

Institute for Economic Research, University of Freiburg

Suggested Citation: Kappius, Robert (2011) : Equal opportunity in educational contexts: Comparing the feasibility of divergent conceptualizations, The Constitutional Economics Network Working Papers, No. 02-2011, University of Freiburg, Institute for Economic Research, Department of Economic Policy and Constitutional Economic Theory, Freiburg i. Br.

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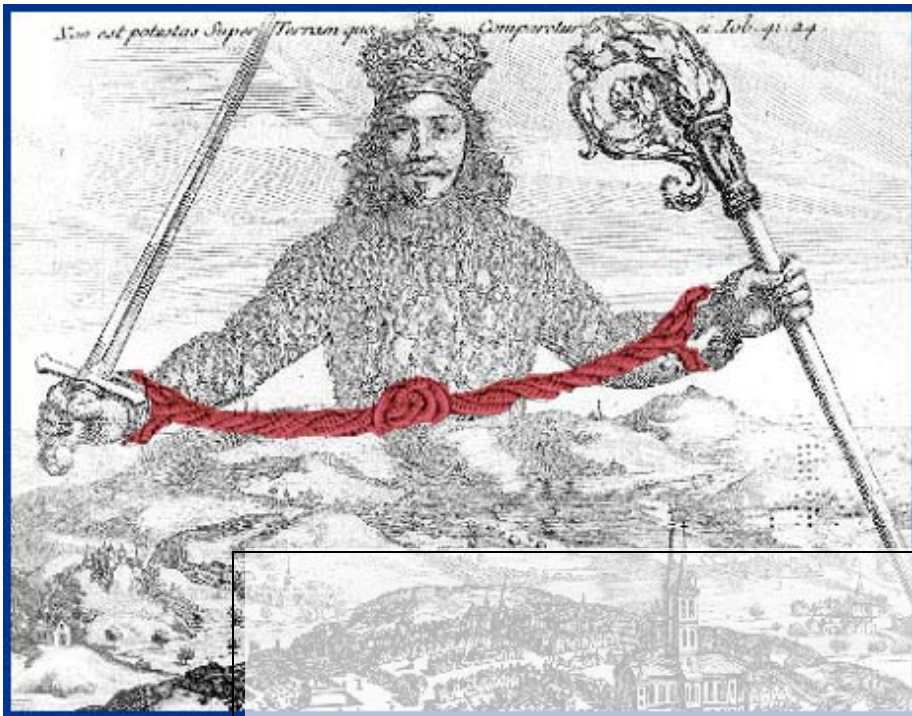
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Constitutional
Economics
Network

Working Paper
Series
ISSN No. 2193-7214

CEN Paper
No. 02-2011

*Equal opportunity in educational contexts:
Comparing the feasibility of divergent
conceptualizations*

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December 5, 2011

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***Equal opportunity in educational contexts:
Comparing the feasibility of divergent conceptualizations****

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First Draft: April 15, 2011

This Version: December 5, 2011

Abstract

For political advice towards ‘equal opportunities’ in educational policy fields, different conceptualizations of the term coexist. While e.g. Roemer and Van de Gaer focused on outcome opportunities, but differed with respect to individual versus group perspective, other scholars like Sen and Thomson interpreted the norm to reflect equal initial choice sets, but differed in their interpretation of relevant choice alternatives. Normative content being partly delegated to political debate, those concepts still incorporate different framings for interpreting equality of opportunity and consequently trigger biased policies. To address this shortcoming, I propose a multidimensional scope of ‘equal opportunity’ interpretations and distinguish feasibility issues of different perspectives toward ‘equal opportunities’ in educational contexts. Contextual characteristics concerning elementary and vocational schooling as well as decentralized education are shown to enable more precise recommendations in terms of feasibility of equal opportunity concepts. Inclusion of divergent conceptualizations may thus prove helpful to overcome feasibility issues.

* The article was presented in 2011 at a conference on equality of opportunity at Sapienza University of Rome, Italy. I thank Pedro Rosa Dias for helpful comments.

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1. Introduction

'Equality of opportunities' as a general idea plays a major role as a justice criterion in educational policy discourse, but when it comes to concrete implementation, the ideal lacks a clear recommendation: Should a policy consist of non-discrimination measures or should affirmative action be preferred? Should aid programs target full equalization of student competences or equalize factor-influences? Critics of equal opportunity often claim that the notion of 'equal opportunity' in education merely serves as a rough and general orientation whereas it fails to be an accurate guideline for implementation (see e.g. Neuhoff, 2008). Scientific attempts to conceptualize this notion of justice have a responsibility-sensitive background in common but developed diverging conceptualizations and idiosyncratic measurement methods¹ (see e.g. Rawls, 1971; Buchanan, 1983; Sen, 1993; Van de Gaer, 1993; Thomson, 1994; Pattanaik and Xu, 1995; Bossert 1995; Kranich, 1996; Roemer, 1998). Equality of opportunity thus seems to encompass both a general idea of justice², addressing the two major themes of freedom and equality (see Rothe, 1981, p.17), as well as a list of specific concepts which are in conflict with each other. For political advice as the ultimate goal of scientific research in this field of justice, the quest of choosing an appropriate conceptualization should be a preceding concern.

Finding an appropriate definition and conceptualization of 'equal opportunities' quite naturally provoked substantial normative controversies³, but implementation issues as a means of choosing between different concepts have largely been neglected. Individual measurement methods have been subject to application issues, e.g. John Roemer received many critical comments on his proposed algorithm (see e.g. Kolm, 2001; Hild, Voorhoeve, 2004; Calsamiglia 2009). But

¹ Being aware of the inaccuracy of their desideratum, some empirical studies have applied multiple concepts to issues of educational policy (see Checchi et al., 2010; Aaberge et al. 2011).

² Opposed German parties refer to the notion of 'equality of opportunity' in their constitutional programs (see FDP, 1999, p. 24; SPD, 2007, p. 5; Bündnis 90/Die Grünen, 2002, p. 62; CDU, 2007, p. 20). In addition, the term is used when discussing educational policy (see FDP, 1999, p. 24; SPD, 2007, p. 37; Bündnis90/ Die Grünen, 2002, p. 103; CDU, 2007, p. 32).

³ see e.g. Cohen, 1989; Arneson, 1989.

commonly, as no distinction between competing concepts is made, specific obstacles are interpreted as a criticism toward the 'equal opportunities' project in general (see e.g. Neuhoff, 2008; Calsamiglia, 2009, p.275).

As a remedy, this article explores a contextual approach towards different opportunity concepts: How do diverging conceptualizations perform in specific contexts of education in terms of their feasibility? While normative content is not part of this assessment, the actual implementation of theoretical concepts as well as impediments due to other social goals are included as possible sources of criticism: Which obstacles will impede a particular measurement of equal opportunities? Does the respective concept provide an accurate guideline to overcome unequal opportunities, once they are discovered? Also, to what extent a concept comes into conflict with other societal goals may be of significant interest. Rather than comparing normative suitability⁴ of opposed concepts alone, this article emphasizes the role of positive issues⁵. For this analysis a norm-related framework is proposed and tested within scenarios of the education system. With respect to elementary and vocational schooling as well as decentralized education, contextual criticism is located within different perspectives on 'equality of opportunity'.

As a central challenge, the scope of 'equality of opportunity' as a general idea and the crucial differences between competing concepts need to be exposed: Which concepts may be subsumed under its heading in the first place and in how far do these concepts differ? Significantly, contending concepts like Roemer's algorithm (1998) or Sen's 'capability approach' (e.g. Sen, 1992) remain open for interpretation. For example, Roemer (1998) allows his algorithm to adapt to a range of different views towards relevant *circumstances*. In dealing with broadly defined and

⁴ Noticing divergent educational policies of political parties with relation to 'equal opportunity', a singular concept does not seem to be suited to cover the wide array of meanings of the term.

⁵ Jon Elster (1992) proposes a positive framework for assessing local justice rules. There, practical restrictions are taken to be the main drivers for selecting a certain justice measure.

flexible concepts, criticism towards a concept is not justified in any case. Robust conclusions may be drawn by limiting the analysis to basic differences between diverging approaches. For this purpose, I introduce three dimensions in which opportunity concepts may take different perspectives: Content of opportunities, time perspective and societal perspective. Working properties of different attributes in those dimensions may be the object of further assessment.

The text is organized as follows. In the next section (Sect. 2), contending views on ‘equal opportunities’ are portrayed with respect to their perspectives in three general dimensions. Sect. 3 introduces feasibility constraints and assesses general implications for opportunity conceptualizations in terms of their different perspectives. In sect. 4, the foregoing analysis is applied to elementary versus vocational education as well as decentralized education environments. In sect. 5, impediments towards implementation for different conceptualizations are summarized. Conclusions will be drawn in sect. 6.

2. Perspectives toward ‘equal opportunity’

If the term “equality of opportunities” refers to a list of - partly conflicting – normative interpretations, is there a way in which we can locate them in a common framework? In this section, I present a definition for the space of equal opportunity concepts. Apart from confining the scope of analysis, this enables to point to the major differences between competing conceptualizations.

The idea of equal opportunity refers to ‘opportunities’ and the political imperative of equalization. It may be viewed as a normative judgment in terms of a *relevant* inequality within a society.⁶ As a common denominator, all approaches towards “equality of opportunity” explicitly or

⁶ According to Sen (1992, p. 43), equality may not be perceived without some evaluative space, though on the other hand, equality always remains part of a social arrangement (ibid., p. IX).

implicitly argue for partial responsibility: Individuals' attributes may be separated into *responsible* and *non-responsible* attributes (see e.g. Fleurbaey, 1995a, 1995b). These concepts are thus in line with a popular trend to combine political ideals of equality and individual freedom or responsibility (see Rothe, 1981). This is unique to equal opportunity approaches in contrast to other justice motives as need, equality of welfare or envy-freeness that pursue only one goal.

Where to draw the line between equality and responsibility is a controversial issue. Accordingly, many different conceptualizations exist: Should (or should not) individuals be responsible for results, initial conditions, personal characteristics, contingencies, luck, and discrimination or not? While this led to excessive debates on where precisely to locate "real" opportunities or "real choice"⁷, other authors have accepted the fact that concepts of equal opportunity – due to an imprecise definition – should leave some room for political discourse or societal decisions on that matter (see Fleurbaey, 1995a; Roemer, 1998). Fleurbaey refers to the notion of responsibility in order to structure opposed views: Differences exist because in relevant situations people have different views on individually responsible and individually irresponsible aspects (see *ibid.*, 1995b, p.26) – influences of the latter factors should be compensated for by the social planner. Roemer (1998) states accordingly that his algorithm should remain open for pluralistic normative views (*ibid.*, p.3). As a result, e.g. Waltenberg und Vandenberghe (2005) apply Roemer's device to diverse educational stages, but promote different degrees of responsibility for each stage. While being able to deal with different views towards responsibility, he considers his concept being applicable to different specific spheres (*ibid.*, p.3). On the other hand, he also points to societal arenas, where a meritocratic view towards equal opportunities might be in favor of a different conceptualization, namely "non-discrimination" or formal equality of opportunity (see Roemer, 1998, chapter 12). Parallel to Roemer, other authors developed

⁷ Cohen (1989) addresses the search for the "real freedom of choice". Debates on this subject touched philosophical issues about the free will, determinism and incompatibilism (*ibid.*, p. 934).

different approaches. Pattanaik and Xu (1990) explored, whether the extent of freedom of choice of opportunity sets – rather than ordinary welfare scales – could be perceivable. Among others, Thomson (1994) and Kranich (1996) focused on equivalent rather than identical opportunity sets. Also, the “equal capability” approach by Sen (see e.g. Sen, 1992), assessing life prospects, can be identified with this field of justice, as individuals (implicitly) remain responsible for results of their choices. The term is also addressed with respect to fundamental norms and societal orders. Rawls (1971) identified “fair equality of opportunity” as an important base of a just society; Buchanan (1983, p.62) likewise discovered it on his search for fair constitutional rules “as some rough, and possibly immeasurable, absence of major differences in the ability to produce whatever ‘game’ is most appropriate for the particular situation for the person who participates“. Aiming at an inclusive analysis on equality of opportunity, these research fields need to be taken into account.

While economic modeling allows opportunity conceptualizations to remain compatible to a range of different interpretations, nevertheless they are not replaceable by a single concept. Keeping concepts broadly defined, the essential differences between concepts have to be distilled. This may enable further inquiries to rely on a rigid common framework.

In order to reflect the views of such a broad range of conceptions and explain their coexistence, I propose three basic dimensions. They reflect three ways in which the term ‘equality of opportunity’ remains vague. Firstly, equalizing opportunities entails – apart from the equalization operation – an opportunity definition: What is the content of opportunities? Also, opportunities refer to a time horizon, as the opportunity to achieve something would lose its meaning if the overall situation did coincide with its final results⁸: Which perspective is taken toward this time horizon? Finally, opportunities may imply different degrees of sensitivity towards relevant information – two different spectators could react differently towards the inequality of a

⁸ Stated in other terms, a contingent state would be replaced by a necessary state.

given situation. While this partly reflects the normative indetermination of a singular concept, concepts tend to restrict their sensitivity towards relevant information. The dimensions – content of ‘opportunities’, time perspective towards the relevant situation, and perspective toward relevant information – each reveal multiple interpretations, as explored in the following paragraphs.

2.1 Content of ‘opportunities’

Equality of opportunity may mean equal conditions for a wide array of ways of life, which themselves should not be of any concern (see e.g. Sen, 1993). Presented this way, opportunities are not measured using virtual evaluations such as midfare or welfare (see Van de Gaer, 1993), but using a measure of substantial freedom. Freedom is often represented using opportunity sets (see e.g. Kranich, 1996). Compensation or redistribution by a social planner requires to measure, to compare and to equalize those choice sets (see, Peragine, 1999, p. 37). In this respect, freedom is not restricted to be an extrinsic value. On the contrary, freedom may incorporate an intrinsic value (see Peragine, 1999, p. 38)⁹: Equal opportunity concepts may ask, whether individuals have a comparable quantitative choice among alternatives (see Thomson, 1994; Bossert, 1995). Those research questions, having preoccupied many authors, have shown considerable obstacles for general recommendations on how to equalize opportunity sets.¹⁰ Their explorations show the difficulty of realizing factual opportunity equalization. In other approaches, researchers do not describe identical opportunity sets (see Sen, 1992, p. 31) but equivalent sets (see e.g. Thomson,

⁹ Scanlon (1988) emphasized the non-instrumental value of a diversity of choice options. Sen (1993, p. 35) argues for both intrinsic and extrinsic values.

¹⁰ Sen (1985, pp. 33-38) lists several impediments towards implementing this conceptualization of equal opportunities: It does not seem clear, whether choice sets may be valued using the value of the best alternative, because an individual may opt for (seemingly) inferior options. When operationalizing the extent of freedom of choice, it does not seem evident, whether clearly inferior choices, which would not be chosen in any circumstance, should be part of the intrinsic value of freedom.

1994, p. 147).¹¹ Equivalence requires a scale for evaluating different sets, like an advantage function (see Maniquet, p. 134). While dealing with another interpretation of inequality, other approaches like Van de Gaer (1993) and Roemer (1998) also view opportunities as being concretely measurable. Regarding this requirement, equality of opportunity cannot tackle some unknown ways of life anymore. Gomberg (2007, p. 156) thus concludes that opportunities may be perceived as freedom as well as probabilities. In order to reflect different kinds of interpretation of the term 'opportunities', it seems convenient to distinguish between concrete, **measurable opportunities** and **unknown opportunities** (i.e. opportunities for unknown purposes).

2.2 Time perspective towards the relevant situation

Heckhausen (1974) noticed that equal opportunities may be assessed in a cross-sectional and in a longitudinal manner, where both ways may lead to diverging conclusions. Cross-sectional analyses evaluate a situation at a certain point in time - thus they may not capture effects that influence individual outcomes over a longer period. A change in perspective may also change the focus from external conditions towards long-term realization potentials (see *ibid*, 1974, p. 108). This, he concludes, shifts responsibility for one's own choice towards being responsible for one's realization potentials in a given environment (*ibid.*, p. 109). For our purpose, a distinction between measuring **point-in-time opportunities** and **time-period opportunities** is made. Point-in-time approaches assume no individual responsibility for the conditions of the choice, whereas full responsibility is assumed for later events. Time-period concepts account for factor-influences beyond individual control, thus assuming partial responsibility for a time-period of interest. Equalizing opportunity sets as opposed to equalizing factor influences may also distinguish

¹¹ Arneson (1990, pp. 85-86) may be taken as an author who addresses these kinds of choice sets: „Equal opportunity for welfare obtains when all persons face effectively equivalent arrays of options.“

between time perspectives.¹² Unfortunately, this distinction is often blurred (see e.g. Ooghe et al., 2007).

2.3 Perspective towards relevant information

Judgments and attitudes towards justice tend to rely on the information available in a specific situation, as indicated by experimental studies (see e.g. Falk et al., 2003). Equal opportunity concepts partly confine themselves to reflect particular information in a situation of interest. For example, the distinction between “ex ante” and “ex post” opportunities (see e.g. Fleurbaey and Peragine, 2009; Checchi et al., 2010) is usually made with behalf of different informational requirements concerning individual behavior (see Fleurbaey and Peragine, 2009, p.2). While this could reflect the difficulty for a planner to acquire information “ex ante” – i.e. before individual behavior is revealed – a time-based distinction between “ex ante” and “ex post” is blurred in the literature. “Ex ante” concepts tend to incorporate information about individual behavior as well (see e.g. Van de Gaer, 1993; Ooghe et al., 2007), while neglecting individual information for normative conclusions. Roemers “ex post” approach may conversely be applied in advance by use of statistical estimations.¹³ Therefore, “ex ante” and “ex post” opportunities may merely rely on information to a different extent. Incorporating less information about individual circumstances may thus be due to absence of information or a normative decision to abstract from such knowledge. Different degrees of abstraction have been made. An **individual point of view** may be opposed by a **group perspective** (see Rothe, 1981, p.58). According to Rothe (1981, p.58), this distinction entails different consequences towards responsibility. While the individual perspective looks at individual versus social contingencies, the group perspective treats members of a group as

¹² Bossert (1997, p.97) defines an opportunity set as „the set of alternatives from which the individual can make choices“. Here, the (individual) decision in a point in time serves as a reference point.

¹³ As an example, Roemer’s approach (1998) requires information about individual choice behavior. Looking at a specific individual, this information will be known after the relevant time period has passed. Looking at society at large, information may be available in advance by use of statistical approximation.

fully responsible for the relative position within their group. Methodological individualism as a basis of economic reasoning seems to suggest a purely individualistic perspective, but arguments for a group perspective prevail. A rationale might consist of an “ex ante” situation, where individuals may only be referred to with respect to their group characteristics because individual behavior is not (yet) observable. Accordingly, a group oriented conception of equal opportunity, as formalized e.g. by Van de Gaer (1993), may be perceived as convenient. As an extreme interpretation, the formal non-discrimination version of equal opportunities may be interpreted to abstract from individual information even more – only equal access according to the law or “negative freedom” may then be conceived as relevant. The **degree of individual information** (i.e. the degree to which information about individual circumstances are reflected in the equal opportunity theory) may take on a range of values. The information perspective thus reveals an important source of discrepancy between non-discrimination and extensive equalization measures. An exact line between individual and group perspective can often not be drawn. Especially in the realm of social contract theory, for Buchanan’s “veil of uncertainty” (see Buchanan, 1983) or Rawls “veil of ignorance” (see Rawls, 1971), a distinction between these views seems to be a matter of degree.

2.4 Summarizing different perspectives

From the combination of different perspectives within each dimension, eight conceptual ‘schools’ can be distinguished (table 1). As the distinction between individual and group perspective seems to be a matter of degree when looking at unknown opportunities and at equivalent opportunity sets, respective ‘schools’ boil down to a singular conceptual framework. In the first rubric, two authors, Sen and Hayek, may cover the two opposing ends with respect to individual information for the later analysis. Van Parijs is classified to be – to the best of my knowledge - the exclusive representative of the next category, however he does not yield

appropriate insights for the following analysis due to lack of a comparable measure of opportunities.

Content of opportunity (enabling freedom versus evaluating opportunities)	Time perspective (equalizing opportunity sets versus equalizing factor influence)	Information perspective (degree of information about individual circumstances)	Concrete concepts / authors
Undetermined opportunities	Point in time (equalizing outcomes at a point in time)	Different degrees of individual information possible	Dworkin (1981), Sen (e.g.1992) , Hayek (1983) , Pattanaik and Xu (1990), Rawls (1971, Buchanan (1983)
Undetermined opportunities	Point in time		
Undetermined opportunities	Time period (equalizing factor influence)	Different degrees of individual information possible	(Van Parijs, 1995)
Undetermined opportunities	Time period		
Concrete opportunities	Point in time	Different degrees of individual information possible	Thomson (1994) , Bossert (1995), (equivalent opportunity sets)
Concrete opportunities	Point in time		
Concrete opportunities	Time period	Comparison of individuals	Roemer (1998)
Concrete opportunities	Time period	Group comparison	Van de Gaer (1993) Comparative statistics

Table 1 – Dimensions of ‘equality of opportunity’ and representative authors.

Using these dimensions, essential differences between equal opportunity conceptualizations may be explained. In the following chapters, the feasibility of contending concepts can be assessed with respect to their differences in perspective. This prevents the current analysis from having to define prototype versions of each concept.

Following this general characterization, representatives from each category are introduced briefly.

Hayek (1983) may serve as a prominent representative for formal equal opportunity and its criterion of “non-discrimination”. Consistently with Hayeks emphasis on decentralized knowledge,

this principle abstracts from any knowledge about individual circumstances and assesses opportunities for unknown ways of life. Special rights for individuals were opposed, if they could not induce general agreement (see *ibid.*, p. 186).¹⁴ While his propositions for educational policy are partly beyond mere formal equality of opportunity (Hayek, 1976, p. 84), in this analysis he is reduced to represent the “non-discrimination” principle.

Sen (e.g. 1992) aims at equalizing lifetime opportunities. In order to be applicable to a multitude of different ways of life, his concept addresses “real freedom” (see *ibid.*, p.31) between individuals in terms of many contingent ‘functionings’. This actual freedom may require more than equalizing available options in a choice situation, as choice may be additionally restricted by individual knowledge and the ability to choose between relevant alternatives (see *ibid.*, p. 149). Contrasting ‘capability’-sets thus leads to a comparison of factual freedom of choice over alternative ways of life (see Sen, 200, p.74). Sen’s approach received substantial criticism of being infeasible (see Sugden, 1993, p. 1953). On the other hand it proved successful in influencing the Human Development Index (HDI) (see UNDP, 1990). Therefore, ignoring its theoretical drawbacks, Sen’s concept may be seen as a decent representative of an opportunity set perspective that takes unknown opportunities into account.

Van Parijs (1995) is in search for “real freedom”, too, but he departs from Sen’s notion as he also delves into inequalities which influence individual freedom over time. Consequently, his approach is able to respond to issues such as power and coercion dynamics influencing individual opportunities. His proposition of a “highest sustainable basic income” (see, *ibid.*) only deals with a singular instrument for compensation of unequal opportunities. In addition, no precise measurement of equality of opportunity is offered. Though he currently seems to be – to my knowledge – the single suitable author in the above mentioned category, I abstain from analyzing

¹⁴ Hayek dampened this view of denying any privileges when referring e.g. to disabled persons.

his concept in the following sections due to a lack of comparability to other concepts in terms of measurement. It surely remains a promising region for further inquiry.

Thomson (1994) assesses opportunity sets. Instead of addressing unknown life time opportunities he belongs to a strand of authors¹⁵ who turn towards concrete evaluations of opportunities. Specifically, they analyze equivalent choice sets (see e.g. Thomson, 2007). Equivalence requires a common evaluation scale, e.g. constructed as some kind of advantage function. Within such a framework, unknown opportunities cannot be assessed anymore. Consequently, measuring and comparing opportunity sets has been of major concern in this research area (see Maniquet, 2004, p. 134).

Roemer (e.g. 1998) may be listed as a prominent representative for assessing opportunities in terms of a concrete, singular outcome. He desires to fight all influences on this outcome that are deemed to be beyond individual control. Therefore, he departs from other approaches by also looking at the realization of individual behavior: Equal opportunities prevail in a situation, where individuals with similar responsibility characteristics face the same outcome (Fleurbaey, 1995a, p.686). According to his orientation towards actual implementation, Roemer's concept has been applied to a number of empirical studies on equal opportunities (see e.g. Betts and Roemer, 2007; Checchi et al., 2010; Waltenberg and Vandenberghe, 2005).

Van de Gaer (1993) is an early proponent of a 'school' which diverges from Roemer's view in taking a group perspective (see Fleurbaey and Maniquet, 2006, pp. 59-66 for a simplified comparison): Information about individual behavior is neglected when drawing normative conclusions. Other, less elaborated concepts which identify opportunities by means of statistical group comparison may be listed in his category as well.

¹⁵ Among others Pattanaik and Xu (1990; 1995), Kranich (1996), Bossert (1997).

3. Feasibility requisites and equal opportunity perspectives

Society may have quite substantial normative arguments ad hand to promote a certain view towards 'equality of opportunity' in a given application. For this analysis, however, normative reasoning – while still central to the overall topic – is left aside, as different views were introduced as equally valid interpretations of the term. Rather, feasibility impediments may help to narrow down the menu of available concepts. As competing concepts remain broadly defined (see last section), differences with respect to feasibility of specific concepts may only be addressed regarding their choice of perspectives, as proposed in the last section. A specific concept, taking up a specific place in the framework (see table 1), consequently faces feasibility constraints according to criticism attributed to its three attributed perspectives. E.g. Sen's approach may be criticized for addressing undetermined opportunities, representing an opportunity set approach and looking at his perspective on individualized information.

Critical assessments of specific concepts on feasibility grounds are not new to the debate (see e.g. Kolm, 2001; Hild, Voorhoeve, 2004; Fleurbaey, Maniquet, 2006; Calsamiglia 2009; Sugden, 1993, 1998, 2004; for an overview over different issues see Peragine, 1999). But commonly, as no distinction between competing concepts is made, specific obstacles are interpreted as a criticism toward the 'equal opportunities' project in general (see e.g. Neuhoff, 2008; Calsamiglia, 2009, p.275). Offering different approaches within an overall framework, I ask whether feasibility problems at hand can be solved by adopting a different perspective, e.g. switching from a point-in-time perspective to a time-period view. Accordingly, I confine the analysis to criticism that (implicitly) argues against a specific perspective rather than detailed technological issues.

Testing feasibility of opposed equal opportunity conceptualizations, I aim at essential impediments towards the original purpose of the concept: Is the concept able to fulfill its own normative demands and does it impede other non-ethical goals significantly? With respect to its

own normative goal, the measurement of the degree of unequal opportunities as well as the actual ability to implement policies to overcome unequal opportunities appears need to be carried out appropriately. Taking a closer look at measuring opportunities, normative specifications of concepts as well as different requirements for empirical research are discussed (3.1.). With respect to implementation, asking for appropriate policy instruments at hand and a clear guideline for political advice prove necessary, if one is to take the project of equalizing opportunities not only as a measurement exercise (3.2). Apart from effective fulfillment of the justice ideal itself, other goals may be of interest for the planner. I restrict my attention to a traditional, major economic and political concern about efficiency issues (3.3.): Does equalizing opportunities incur high costs? Does it distort allocative efficiency to a significant degree? Feasibility may also include a list of political aspects such as voting constraints and the exploitability of the fairness concept by special interests, which are not integrated here.

What is the purpose of scrutinizing feasibility constraints? Some problems such as the failure to measure opportunities according to a specific concept may lead to excluding this concept from the political choice menu. If a social planner fails to measure the degree of inequality of opportunity with use of a specific concept or if instruments to address this kind of inequality of opportunity are not at hand, one is inclined to question the concept itself. Other problems such as efficiency issues may solely impose significant “costs” when implementing a specific concept. This information may be of relevance in normative debates when choosing an opportunity concept. If no implementation issues were to arise for competing conceptualizations for an educational application, the choice between them would remain purely normative.

3.1 Specifying normative content and measuring opportunities

As mentioned before, concepts remain broadly defined, because their authors are aware of the issues’ vagueness. For each attempt to measure ‘equality opportunity’ therefore, one major

task is to specify its normative content. As an example for a broadly defined conceptualization, Roemer (1998) lists *circumstances*, *scope* and *extent* as relevant normative content of an opportunity approach that require a political answer in advance: Should educational opportunities relate to elementary education, college grading or prospects on the labor market (*scope*)? Should family background, ethnic origin, the quality of neighborhood, genetic disposition and / or cognitive abilities be defined as non-responsible *circumstances*? How important is equalization of educational opportunities in relation to other goals (*extent*)? These questions remain relevant for all concepts considered here: For example are *circumstances* group characteristics in some conceptions, they are described by the choice set in others. Gaining knowledge about precise normative conceptions – commonly by delegation to some collective decision mechanism – thus may impose significant implementation obstacles on a specific concept, if many parameters remain vaguely defined.¹⁶ The measurement of opportunities as an empirical task may – depending on the environment – also be a difficult endeavor. Although this induces highly context dependent reasoning, some generally valid points may be introduced.

Regarding the *content of opportunities*, undetermined opportunities involve multiple questions (see Peragine, 1999): Should the degree of freedom of choice be part of the measure and how can this actually be carried out? How are diverging choice sets to be compared across individuals? Measuring the intrinsic value of freedom adds difficulties to those concepts (see Sugden, 1998, p. 315). Axiomatic reasoning in the literature on opportunity sets led to impossibility theorems on measuring freedom in a cardinal way (see e.g. Pattanaik and Xu, 1995). On the other hand, concrete opportunities require evaluation standards, which imposes serious decision problems:

¹⁶ In order to alleviate implementation, concepts often incorporate further normative assumptions. Roemer's algorithm entails an implicit consent on additional normative premises such as his 'assumption of charity' (Roemer, 2003, p. 266). This assumption assigns similar *effort* to individuals of different *types* when they are at the same percentile of their group-distribution of the relevant outcome. As people who agree on a factor-selective opportunity measurement might still disagree on this assumption, it would remain an open issue for politics.

Should opportunities be evaluated in terms of an outcome or resulting welfare?¹⁷ Van de Gaer (1993, p. 3) points to a range between objective standards (e.g. income) and subjective standards (e.g. satisfaction) as available scales - a medium standard is seen in 'capabilities' and 'midfare'. Choosing between different scales surely involves normative considerations (see *ibid*, chapter 3). Regarding multidimensional opportunities (e.g. opportunities to become a college student and a basketball player), comparing choice sets involves the introduction of equivalent opportunities and a cardinal evaluation scale for different options. When carrying out the actual measurement, undetermined opportunity concepts require information about actual choice alternatives or capability sets. Apart from circumstances, approaches that measure opportunities in terms of outcomes or equivalent opportunities require information about outcome variables.

With respect to the *time perspective*, time-period approaches that aim equalizing factor-influences like Roemer (1998) usually address only one opportunity (e.g. the opportunity to become well-educated, to achieve an educational degree or to pass college-admission) whereas point-in-time concepts commonly address multidimensional choice sets. Thus, multidimensional choice approaches face additional opposition, as political debates on including, measuring and comparing an opportunity will take place at every single choice option. The *time perspective* also reveals issues when actually measuring opportunities. Equalizing the influences of specific factors (time period approaches) generally requires information about functional interrelation between non-responsible factors and outcomes.¹⁸ In addition, individual reactions towards the application of compensation need to be addressed in order to derive recommendations for policy mechanisms (Roemer, 1998, pp.33-35). Trannoy (2003) argues that full equalization of factors may incorporate high costs as observation of relevant circumstances may be costly. Also, specific situations may

¹⁷ This question inspired various philosophical debates (see e.g. Cohen, 1989; Arneson, 1989, 1990).

¹⁸ Fleurbaey and Maniquet (2006, chapter 4.1) assess different policy instruments with respect to a variety of functional technologies.

require effort to be measured directly (see Calsamiglia, 2009) – which may render factor-selective approaches inexecutable. In addition, they may require information about individual behavior e.g. in order to distinguish between different levels of *effort* (see Roemer, 1998). This seems to be a burden of those approaches compared to merely equalizing opportunity set options.

The *information perspective* points to less costs for less individualized norm-related information. Turning towards formal equalization of opportunities, far less space is left for normative debating: Possible conflicts are reduced, as (subjective) questions on how to evaluate opportunities are not touched at all. Turning towards actual measurement of opportunities, procedural concepts of “non-discrimination” perform without any difficulty. John Rawls (1971, p. 87) sees a great practical advantage in procedural concepts in “that it is no longer necessary in meeting the demands of justice to keep track of the endless variety of circumstances and the changing relative positions o[f] particular persons.”¹⁹ Thus, less informational requirements stem from concepts that do not have to establish specific distributions for a relevant outcome. This applies to approaches provided by Hayek (1976), Buchanan (1998) and to a degree Rawls (1971) as well. Group-related approaches may face less impediments in this respect as well. But Van de Gaer’s algorithm (1993), analysing factor-influences, requires the same kind of information as Roemer (1998).

3.2 Implementing policies to achieve equalized opportunities

Implementing equal opportunity policies requires suitable instruments. Instruments of educational policies such as aid programs, structural changes of schooling institutions, admission

¹⁹ Rawls (1971, pp. 85-86) contrasts perfect, imperfect and pure procedural justice procedural justice: While perfect procedural justice incorporates a just result as well as an independent fair process which leads to this result, a perfect result may not be obtained for imperfect procedural justice. Pure procedural justice applies, when justice cannot be conceived apart from the fair process.

policies, information evenings or (monetary) compensation are generally no substitutes in promoting the ends of specific conceptualizations. With regard to the educational system, a huge list of specified political measures has been the object of scientific research. Theoretical and empirical studies compare different policy solutions with respect to their effectiveness in reducing inequality, their efficiency in promoting overall school quality and allocation issues at the job market. In order to assess conflicts between issues of justice and other societal goals, it is therefore crucial to assess the quality and applicability of different instruments. Concepts of equal opportunity are assumed to be compatible to many policy instruments –actual strategies to remove inequality of some kind are usually not discussed within these concepts. Which general conclusions on the appropriateness of concrete concepts are allowed for?

With regard to the content of opportunities, undetermined conceptualizations of opportunities can only be instructive, if instruments are able to target the sources of inequality or the original choice sets themselves rather than compensatory instruments. As examples for compensatory educational policies, one might consider quota regulation in college admission policies, altering grading scales like SAT scores for specific minorities or monetary compensation. While analyses frequently refrain from a distinction between various kinds of policy instruments when addressing equality of opportunity (see e.g. Fleurbaey and Maniquet, 2006; Bossert et al., 1999), implications of applying a specific concept may actually differ. Taking Sen's "capability" concept as an example, a mere compensation for unequal "capabilities" seems inappropriate with respect to the original idea of the concept. A "capability" concept appears not suitable for educational environments, where the original sources of inequality are out of reach for policies.²⁰ In the end, it remains an empirical issue to ask, where educational policy fails to remove sources of inequality. Measuring

²⁰ In Germany, parents' right to educate their child is guaranteed by the constitution (see: Grundgesetz). The right of the state to supervise the school system (Art. 7 Abs. 1 GG) may – by applying policies like enhancing day schools or providing additional resources – only mitigate inequalities due to parental education.

concrete opportunities does not lead to this substantial limitation, as options available in one specific dimension may be weighed against other options or factor-influences may be compensated by e.g. monetary transfers. Concepts directed at specific opportunities are in principle compatible to compensatory measures. Adversely, concrete approaches like Roemer's algorithm may not be able to formulate precise specifications for policy implications, if many causes of unequal opportunities exist that require different policy instruments. An endless variety of policies using different instruments may result.

In *a time perspective*, a categorical problem that is shared among point-in-time approaches, results from its implied requirement to equalize individual attributes in a specific situation to a full extent. If an educational outcome – be it the final grading at the end of secondary school – may not be fully equalized among students because available instruments only control for some factor influences, opportunity set representation of 'equal opportunities' seems implausible. Factor selective approaches may then still be able to fulfill their goal. On the other hand, Fleurbaey and Maniquet (2006) show how specific functional technologies may render factor-selective equal opportunity concepts unfeasible, resulting in an "ethical dilemma" (Fleurbaey, 2005, p. 16). For example, feasibility of equal opportunity may depend on the availability of policy instruments at a certain point in time.²¹

²¹ As an example, two functional settings may explain diverging results (see Fleurbaey and Maniquet, 2006, pp. 3-7). (Educational) outcome or utility U , $U = U(x, y, z)$ stems from factors of category x , which are controllable by the social planner, individual factors of category y , that are deemed irresponsible and should be targeted by compensatory measures, and factors z , which are deemed individually responsible (see Fleurbaey 1995b, p. 26). Two functional specifications are $U = (x + y)z$ (1) and $U = (xz) + y$. While the former function may be interpreted as a situation, where instruments x may directly target factor y , the latter function, restricts government intervention to interact with individually responsible behavior, resulting in a conflict between compensation and neutrality requirements. An example for the first technology might be direct targeting of students' linguistic deficits by use of specific support programs. In the second case, school policies may e.g. only affect learning environment, while striving to mitigate family background factors.

Concerning the *information perspective*, instruments seem to be more easily available and applicable for less individualized concepts. Building upon the criterion of purely procedural fairness, concepts of formal equal opportunity require only similar access to schooling as well as non-discrimination within schools. In states where rule of law is enforceable at low costs, this requirement should not pose a serious obstacle. Concepts that require more substantial individual equalization also require access to more elaborate instruments, as factual freedom of choice, influences of non-responsible factors on educational outcomes or outcomes themselves need to be altered.

3.3 Conflicting goals: Efficiency constraints

With regards to education, Rothe (1981) lists qualification and selection processes as partly conflictual aims to equal opportunities in the educational system. Belfield and Levin (2002) distinguish between efficiency in producing qualification, which requires finding the best available ‘technology’ for this purpose – technological efficiency – , and allocative efficiency, which requires free choice for students, schools and labor market actors. On a first account, it should be noted, that equal opportunity measures do not need to conflict with neither technological nor allocative efficiency. As an example, Bowles et al. (2009) show theoretically, that formally functioning markets may lead to inefficient results, when positive spill-overs of education persist. Also, empirical evidence for Germany indicates that students from underprivileged families, controlling for individual ability, still opt significantly less often for the higher track in a tracking system (Ditton, 2007). However, as far as trade-offs between measures towards equal opportunity and efficiency goals actually exist, the question arises, whether opportunity concepts differ systematically in this respect.

The *content of opportunities* restricts the use of compensatory instruments to concrete opportunities. Compensation does not target the origin of unequal opportunities. If applied for

compatible concepts, compensation may lead to allocation problems. As an example, a quota regulation for college admission may give wrong signals with respect to further educational and vocational decisions – this merely shifts the initial problem to a different sphere. Also, compensatory instruments are more likely to promote dysfunctional incentives, e.g. students may be inclined to cheat on an IQ-test in order to receive compensation for being dumb (Roemer, 1998, p.9) . Instruments which are focused to fight the sources of unequal educational aspects directly, do not face this problem, as individuals do not have an incentive to misreport on their circumstances or choose an inefficient option. As an example of a policy instrument one might think of courses teaching the official language of the educational system. If linguistic skills are found to be a source of unequal opportunities, this instrument neither induces affected students to choose an inefficient education path nor non-affected students to misreport their skills. Being only compatible to this type of instrument, approaches such as Sen’s “capability” approach may merely imply technological inefficiencies.

In a *time perspective*, factor-selective approaches appear more suitable to technological efficiency for a given equalisandum (e.g. schooling outcome), as they requires only partial equalization compared to a full equalization of opportunity sets; full equalization of educational outcomes involve prevalent technological inefficiencies of an instrument to a larger extent. Also, as no responsibility for the outcome of interest is involved, students face negative incentives, i.e. individual schooling efforts are prone to moral hazard.

Concerning the *information perspective*, no generalized conclusions seem available. The scenarios by Bowles et al. (2009) and Ditton (2007) mentioned above indicate that inclusion of individual information may enhance efficient schooling choices. Statistical discrimination (Arrow,

1973) as a self-fulfilling prophecy²² may also cause inefficient schooling choices. This hints at a number of educational problems, where pure formal equality of opportunity does not lead to technological nor allocative efficiency. On the other hand, asymmetric information concerning de facto circumstances of a student serves as a counter example, where taking more individual circumstances into account is costly.

As a conclusion of this section, different perspectives towards 'equal opportunities' encounter different obstacles with respect to implementation. On the contrary, a general comparison between different 'schools' in the realm of 'equality of opportunity' does not render any perspective as generally unfeasible. Therefore, switching from a general debate to a contextual comparison in different educational environments may lead to less indeterminate results.

4. Educational contexts and equal opportunity perspectives

The foregoing section introduced to major difficulties that opportunity concepts may encounter. Whether or not those difficulties actually apply still depends on concrete applications. Applying opportunity concepts to specific features of the education system may help to locate feasibility impediments. Taking up a contextual perspective towards educational opportunities, specific issues such as information problems or availability of instruments are important. Specific concepts may turn out more suitable for one context than another. These results seem appealing as a first step towards consensus of equal opportunity policy in education.

²² Chaudhuri and Sethi (2003, p. 1) highlight Arrow's (1973) insight to imply a self-fulfilling prophecy – behavior of students that are stigmatized with a stereotype will tend to direct behavior in this direction.

In order to derive conclusions on a general level, two very fundamental aspects are investigated.²³ Education is typically of both elementary and specialized, vocational content (4.1.). The institutional environment is proposed to consist of both centralized and decentralized spheres (4.2).

4.1 Distinguishing content: Elementary and vocational education

Economists increasingly step away from their view on education being solely human capital formation. Friedman (1971, p.115) accentuates the distinction between education and vocational training. Bertocchi and Spagat (2004) refer to technological and general education of modern education system in their model. In most countries, elementary education and technological education are organized separately. Although there is no total separation, school types may be distinguished with respect to elementary or vocational education. Educational content is closely affiliated with economic patterns for justifying public provision of education (Friedman, 1971, p. 118; Rose, 2009, pp. 96 – 105). This distinction may lead to more specific considerations with regard to opportunity concepts. This reasoning is also in line with a normative differentiation of opportunity policies in educational environments (see e.g. Waltenberg and Vandenberghe, 2005).

While it is not apriori clear, where elementary education ends and where vocational training begins, it is a common theme of virtually all education systems that vocational education builds upon competences learned in early school years. Accordingly, the common standards of the German “Bundesländer” (member states within the federal Republic of Germany) demand profound competences for primary schools and more specialized competences for posterior

²³ While e.g. some researchers study situational policy instruments in the context of tracking systems or private schools, others treat this institutional environment as an endogenous variable in their proposal (e.g. Brunello and Checchi, 2006). Therefore, whether a context is irreplaceable or not, depends on the scope of research questions asked.

schools that are built upon preceding skills.²⁴ Thus, vocational education follows elementary education in terms of contents and in a time perspective. Building upon this very basic premise, several implications for opportunity concepts are drawn.

The dualism of education leads to implications for normative information requirements. With the notion of “primary goods” John Rawls’ (1971) introduced the rationalization of normative issues.²⁵ Rationalizing the scope of an ‘equality of opportunity’ concept seems far-fetched. But given that some concepts confine their scope to issues of individual freedom, one may ask, whether elementary or vocational education serves this purpose better. Elementary competences, being a requisite for vocational education and for other, yet unknown purposes, are more essential as part of an individual opportunity set than vocational skills.

As another implication, individual behavior and external influences in the phase of early elementary education will influence final outcomes of elementary school as well as future education, thus marking an additional burden for instruments in later schooling. Undesired inequality, not being reduced appropriately during primary schooling, may prove to be irrevocable for policy instruments in the field of vocational training. Here, an interest in specialization may bring about additional challenges, as will be discussed in a later paragraph. As far as later institutions may be confined to deal with consequences of specific circumstances, equal opportunity concepts which demand a less intense equalization are more likely to achieve their aim.

²⁴ For elementary schooling, basic competences for German and mathematics are formulated (KMK, 2004a), for lower track secondary education and General certificate of secondary education, additional competences, built upon primary competences, are mentioned (KMK, 2003; KMK, 2004b).

²⁵ Rawls introduces “primary goods” in the context of searching for a unified “theory of justice”, where “primary goods” are deemed to be desired by every rational man, „[...] though men’s rational plans do have different ends, they nevertheless all require for their execution certain primary goods, natural and social”(ibid., p. 93).

Efficiency issues also apply to some concepts more than to others. As suggested, technological efficiency of policy instruments seem more effective in the first years of schooling more in the following years. Wößmann (2010, p. 78), confronting education investments and benefits over lifetime, finds investments of unprivileged school children to reap high benefits in comparison to both privileged children and investments at a later point in time, while later investments perform poorly for those students. His theoretical argument certifies early education to foster direct benefits and to constitute a necessary component for future education at the same time. Investments in vocational education periods, on the other hand, perform poorly, if investments in early school years were low. Empirical evidence for this “skill begets skill” hypothesis is offered e.g. by Heckman (2000). Turning towards labor market requirements, vocational education is urged to develop selection mechanisms for allocation purposes. This adds to the argument mentioned before: *Ceteris paribus*, a concept demanding less individual information is more suitable for vocational education.

Another argument that distinguishes between both kinds of schooling is specialization for diverging job qualifications. This is typical for later schooling, while elementary education offers similar contents across schools. Dealing with individual behavior in a complex environment of specialization poses high informational demands for political planners. Here, formal notions of equal opportunities face fewer impediments.

If the arguments mentioned before prove to be correct, how does this shape our evaluation of opportunity concepts with respect to the three dimensions of equal opportunity concepts?

Content of opportunities: Arguably, normative reasoning for „undetermined“opportunity concepts is easier in fundamental education, as more basic competences for unknown ways of life are taught here than in vocational fields. Sen’s “capability”-approach and other, freedom-based

concepts seem especially well-suited to the context of elementary education, as factual competences for (yet) unknown opportunities are their primary concern. Taking the example of developing countries, Sen (1993, p. 31) argues that “we may be able to go a fairly long distance with a relatively small number of centrally important functionings and the corresponding basic capabilities“(see Sen, 1993, p. 31).²⁶ Therefore, the question of deciding which opportunities to equalize is not of major dissent in that area. Accordingly, Sen (1980, pp. 217-18) aims at equalizing basic competences. Also, instruments that target the “capabilities” may be judged to perform better in early years of schooling (Wößmann, 2010). These approaches may prove easier to be applied in elementary than in vocational education because of available instruments.

Time Perspective: Point-in-time approaches that require full equalization seem more reasonable in early schooling, as for later schooling, offers, remaining policy may have a harder time cancelling out the diverging results from earlier schooling to a full extent. If full equalization remains possible, it may have to rely on more inefficient education technologies. Thus, factor-equalization appears less costly especially for later vocational education. It benefits from its incentive compatibility (see Roemer, 1998, pp. 33-35) in terms of efficiency issues. This gives arguments at hand for promoting outcome-equalizing opportunity set approaches in early years of education and factor-selective approaches for vocational issues.

Information perspective: If vocational schooling is equated with specialization, this impedes individualized approaches to be implemented. E.g. Sugden (2004) criticizes the Roemerian approach for being incompatible to the informational market environment. Roemers algorithm requires to measure the impact of given policy instruments on individual behavior– e.g. by use of

²⁶ The ‘capability-to-functionings’-approach may not be taken as a synonym for Rawls’ “primary goods”, as those goods may not be converted into the same “well-being” by different individuals (Sen, 1992, p. 33). On the other hand, both authors refrain from measuring “well-being”, due to difficulties of objective measurement.

small-scale experiments (Roemer, 1998, p. 29). In contrast, implementation of the “non-discrimination”-principle is not influenced by different educational contents, as information requirements remain low. Informational issues that arise in decentralized education contexts are addressed in the next subsection.

4.2 Centralized and decentralized educational processes

Applications may also very generally vary with respect to institutional arrangements: Centralized processes as well as decentralized contexts can be distinguished. As centralized processes appear to be the usual reference point for conceptualizations, only implications from decentralized processes are discussed.

Oftentimes, schooling processes are not organized by a central government. While in Germany e.g. standards for learning content are coordinated by a centralized institution and school-leaving examinations are going to be centralized as well, other processes are governed in a decentralized manner – in such an environment, local institutions act autonomously. Looking e.g. at school tracking in Germany, institutional rules usually refer to students of a single track. In addition, resulting from PISA assessment, more autonomy and competition between schools is a prominent request in political debates (see Deutsches PISA-Konsortium, 2001). In this context, local agents, aiming at forming the schooling process, are confronted with specific topics (“Who is being admitted to our school? To whom shall we give additional support?”...) (see Young, 1994, p.6). Waltenberg (2006, p. 25) argues, that searching for just solutions in this environment should take into account “segmented justice” because of its feasibility and tractability. This points towards problematic aspects of decentralized schooling: When individuals act autonomously and behavior cannot effectively be coordinated by a central planner, informational and coordination problems may occur. In this environment, Calsamiglia (2009, p. 274) defines a local rule of justice “as a rule that decentralizes a given distributive justice criterion when information is dispersed and decision

making decentralized.” Dealing with the practicability of different notions of equal opportunity, one may ask whether different concepts perform equally well in a decentralized environment. Are they equally able to overcome coordination problems in order to promote not only local justice, but equal opportunities for all students participating in the educational system?

Informational requirements may be an obstacle towards measuring opportunities. Calsamiglia (2009) shows theoretically, that concepts which aim at equalizing the local outcomes with respect to non-responsible characteristics of individuals fail to generate equal opportunity at a macro level of the educational system.²⁷ This results from a local policy distortion of individual choice sets with regard to other educational institutions. Calsamiglia also provides a rule which still enables local planners to achieve local as well as global equality of opportunity. The rule calls for “local equality of rewards to efforts”(ibid.). As an example of how effort could be measured, she uses expenditure of time for local educational activities like learning. This gives rise to immense informational requirements: Performance within the realm of individual responsibility may not be derived from the distribution of results (as proposed e.g. by Roemer, 1998), but needs to be measured directly. While in some contexts, local efforts may be observed by e.g. class teachers, in other situations this is very costly. Is this a general problem? As it turns out, equality of opportunity interpreted as equalizing specific educational competences (e.g. literacy, math-skills) to a full extent, no further information is required.

How do decentralized educational contexts perform with respect to the functionality of policy instruments for equalizing diverging concepts of equal opportunity? As coordination problems pose a major threat to the functioning of decentralized regimes, issues requiring coordination are of special relevance. German municipal activities towards coordinating education efforts of local

²⁷ Calsamiglia (2009) introduces the problem with an example of two students, who may decide between college and a basketball career. As college admission office and NBA recruiters may only observe local efforts, compensating for non-responsible factors on local outcome may result in unequal opportunities on the macro level for both students (ibid., p. 278).

institutions underline the relevance of this issue: In Cologne, a common framework was arranged to coordinate institutional efforts towards early childhood education, general schooling, linguistic education and support, education consultation, adolescent support and health care in order to target those causes of differential school attainment that could not be removed by a single institution (Stadt Köln, 2011). If a local institution does not control all relevant instruments to fight unequal opportunities, it will have to coordinate its efforts with other institutions. This favors opportunity conceptualizations where policy implications are clear and simple, whereas other concepts that require coordination of instruments with other institutions may lead to diffuse local policy implications.

Again, I turn towards implications for opposing perspectives toward equal opportunity.

Content of opportunities: Concepts addressing undetermined opportunities have to equalize real differences.²⁸ No serious information problems apply. If, for example, equal outcome in math skills and equal basketball skills²⁹ as part of Sen's „capability“-approach were to be dealt with locally, each institution would face clear specifications and did not have to take into account student's other choice options when measuring opportunities.³⁰ Even if a local outcome is influenced by other institutions, it appears to be relatively easy to observe whether a student actually achieved the outcome or not. Concrete opportunities may involve compensation issues. E.g. equivalent choice sets would still require coordination and informational exchange in case those opportunities were not identical but could be weighed against each other. In order to evaluate whether students actually have the same overall opportunity for a mathematic or a

²⁸ Sugden (2004) contrasts “ex ante” and “ex post” approaches in market environments: If the spontaneous order poses restrictions on available information, “ex post” approaches may lead to a distortion of market signals for scarcity or in negative incentives.

²⁹ These two examples are taken from Calsamiglia (2009).

³⁰ Sen's approach, e.g. in its reduced and simplified form applied in the HDI, delivers multidimensional educational outcomes as an easy guideline for politics.

basketball career, each institution would have to receive full information about student achievement in all other relevant institutions.

Time perspective: As time-period approaches equalize factor-influences rather than outcomes themselves, they tend to propose a less clear-cut guideline for politics. Equalizing specific outcomes is a practicable advice for educational politics. For students, no choice between different degrees of effort for different educational outcomes is involved. Factor-selective concepts on the other side may distort individual choices when ensuring “local independence of outcomes from irrelevant characteristics” (Calsamiglia, 2009, p. 274). Global equality of opportunity remains possible when local policy instruments are able to target circumstances per se (e.g. when linguistic deficits as a major reason for local inequality of opportunity can be directly targeted via a special support program) or when a local institution ensures “equal reward for equal effort” (Calsamiglia, 2009). But as the second solution requires to actually measure individual efforts, “[i]mplementing this may be hard and may require mechanism design techniques because effort is usually unobservable.”³¹

Information perspective: The degree of individual information can have an impact, if circumstances are hard to observe and coordination of information is costly. E.g. the information issues mentioned above render Roemer’s algorithm with its individualistic perspective unfeasible. In contrast, formal equal opportunity concepts do not encounter specific impediments with respect to informational requirements nor instruments, as this conception needs no information about individual circumstances or actual behavior, nor does it require coordinating instruments.

³¹ Calsamiglia (2009, p.275).

5. Summarizing results for different concepts

With respect to the scrutinized educational environments, strengths and weaknesses of different perspectives are summarized and commented with respect to representative concepts. A comparison shows that – leaving normative arguments aside – concepts incorporate different strengths and weaknesses for implementation in different contexts.

Hayek: Formal equality of opportunity retains its feasibility in all contexts discussed without incurring significant “costs”. But, apart from its very defensive normative interpretation of the term ‘equality of opportunity’, problems in situations where positive spill-overs from education or statistical discrimination persist, represent a major concern for this approach. In comparison to other schools, equality of opportunity as “non-discrimination” performs well in decentralized education scenarios and whenever coordination issues, dispersed knowledge and lack of affirmative action instruments are involved.

Sen: As a representative of freedom-based concepts for measuring (yet) unknown opportunities, Sen’s version of equality of opportunity seems especially fruitful for early years of schooling. This is due to a less overarching normative justification for applying his concept. Also, elementary education gives rise to a higher likelihood of finding policy instruments to remove inequalities in educational outcomes. In addition, huge investments in early childhood and primary schooling seem to be a relatively cheap solution. For vocational education, the opposite holds. Also, his approach remains interesting in decentralized contexts because of a clear guideline for policies and relatively few informational problems. Being a theoretical pillar for the HDI, Sen’s concept has already been applied as an indicator for equal opportunities and development. This indicator addresses need for action in the dimensions of longevity, education and resources (UNDP, 1990).

Thomson: Equivalent opportunity set concepts generally do not intend to deliver precise policy implications on how to equalize opportunities. In this respect, their implications would heavily rely on evaluation scales. A specific advantage of this conceptualization is seldom to be found: In many educational situations of interest, a relatively bad option in one dimension of a student's choice set is often correlated with bad options in other choice options. Therefore, this kind of comparison e.g. between groups of students, appears rarely in public debates. As an exception, one may think of e.g. a comparison of choice sets of young men and women, where choice sets often include diverging options such as becoming a model versus becoming an NBA basketball player. Still, measuring this opportunity situation does not lead to a clear guidance for respective institutions on how to equalize opportunities. Therefore, this strand of literature has – to the best of my knowledge – not been applied to educational settings.

Roemer: His general applicability to educational questions is attested in many empirical studies that relied on his concept (see e.g. Waltenberg and Vandenberghe, 2005; Betts and Roemer, 2007; Checchi et al., 2010). A categorical evaluation of his concept reveals that it should be limited to specific regions in the field of education. On the one hand, his concept seems to be appropriate in vocational education, as his aim to remove factor influences on specific outcomes proves more realistic than a – freedom based – complete equalization of outcomes; also, incentive compatibility renders his view more in line with allocative efficiency demands of labor markets. On the other hand, decentralized educational contexts tend to provide problems for executing the algorithm: Either his mechanism leads to a distorted macro level of educational opportunities, or – building upon Calsamiglia's proposition – policy instruments may be nonexistent. Conclusively, the algorithm should be reserved for educational issues of macro political concern like e.g. financing

schemes for schools or districts.³² The current framework to assess Roemer's algorithm proves helpful, as one-to-one comparisons to other concepts with respect to feasibility may only be accomplished in a fairly restricted way. Normative criticism towards his concrete conceptualization (see e.g. Kolm, 2001)³³ should be contrasted with his focus on actual application of this concept.

Van de Gaer: Representing a similar conception of a factor-selective view towards opportunities, Van de Gaers concept resembles the Roemer algorithm in terms of applicability. While both views entail different normative merits (see Ooghe et al., 2007), their application also lead to differential issues. These cannot be found in informational differences, as Van de Gaer relies on information about individual behavior to a similar extent as Roemer, but neglects them for normative purposes. Rather, (positive) discrimination according to group characteristics may be easier to handle than having to rely on individual effort levels. As a consequence though, incentive compatibility is lowered as well.

6. Conclusion

The term 'equality of opportunity' misses a universally accepted meaning. Diverse conceptualizations compete for the privilege of interpretation. This article takes a look at a range of diverging concepts and assesses their interpretation of 'equality of opportunity' with respect to practical requirements concerning information, implementation and other non-ethical goals in educational contexts. As a result, divergent concepts can be recommended for different educational environments. Rather than carrying out normative conflicts in the sphere of ethics,

³² Also, statistical issues prevail in small-group applications. This adds an argument for applying the Roemer-algorithm to large-group settings (see Kolm, 2001, p.10).

³³ Roemers algorithm tends to direct compensatory measures towards their most efficient use. Hild and Voorhoeve (2004, S. 140) state, resulting incentives may play a positive role in educational contexts, as elites who produce positive external effects, may be targeted.

this outcome offers a chance of consensus in the realm of practical implementation. Following this idea, a framework for assessment is proposed.

Contrasting different 'schools' indicates that a positive comparison may be instructive - this may even induce a political consensus for a contextual choice among competing opportunity conceptions. Still, conclusions have to remain on a cautious level. Feasibility of different concepts cannot be compared in a quantitative manner due to concrete empirical issues in educational contexts, which may still give rise to a scope of different issues: How well do instruments as aid programs or financing schemes perform in reducing unequal opportunities? How tough are efficiency trade-offs? How easily may normative specification of concepts be resolved in public choice? Finally, difficulties of implementing a specific conception of justice may not counter its normative appeal altogether. Limiting the impact of efficiency goals, conflicts between equal opportunity goals and positive operational properties may not render a conception completely unfeasible. Rather, immense costs may occur. Nevertheless, this research perspective remains instructive and imperative as it enables a transparent discourse in an otherwise fuzzy field of justice.

Implications may be considered by empirical and theoretical research on equal opportunities. Regarding theories, the need to keep connected to real-world implementation is emphasized. Empirical investigations can use this framework for a transparent and reasonable choice of a opportunity measurement method for a particular educational field.

Further research may direct its attention towards systematically including empirical insights with respect to concrete contexts. Also, additional feasibility requisites such as political constraints may be reflected. Furthermore, normative tendencies, which according to Walzer (1983) might persist in different educational spheres, could be incorporated into a similar analysis. As 'schools'

of equal opportunity are open for refinement, developing Van Parijs' freedom-approach for educational purposes seems to be a promising task.

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