Discussing sustainable development among teachers: An analysis from a conflict perspective

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Education for Sustainable Development has been discussed as problematic, as a top down directive promoting an "indoctrinating" education. The concept of the intertwined dimensions (economic, social-cultural, and environmental) of sustainable development is seen both as an opportunity and as a limitation for pluralistic views of sustainability. In this paper we study possibilities that allow different perspectives of sustainability to emerge and develop in discussions. We focus on the conflicting perspectives of the intertwined dimensions in some main theoretical models in combination with the use of Wertsch's function of speech framework to construct a *conflict reflection tool*. As an illustrative case, we apply this conflict reflection tool to an analysis of a discussion among seven secondary school teachers on climate change. The results in this particular example show the dynamics of speech genre and content in developing different perspectives. We conclude our paper with a discussion of the conflicting view of the integrated dimensions of sustainability in relation to an agonistic pluralistic approach, and we consider its relevance in an educational context.

Keywords: Education for sustainable development, environmental education, agonistic pluralism, dialogic function

Introduction

Education for sustainable development (ESD) has been the target of extensive interpretation and discussion, as has the concept of sustainable development itself. Sustainable development as a concept is by necessity complex, dealing with the integrated dimensions of environmental, social-cultural and economic sustainability. It involves a diverse range of embedded values and ideologies and calls for engagement in value-related and political issues related to the environment, equality, and lifestyle. ESD has been discussed as problematic as a top-down directive. It originates from political declarations in a succession of international policy documents. The aim declared by the United Nations initiative Decade of Education for Sustainable Development is to encourage changes in behaviour that will lead to "a more sustainable society for all" (UNESCO, 2012). In an educational context this top-down perspective in value-driven questions has been considered challenging and vulnerable to claims

that it amounts to indoctrination (Jickling, 2003; Jickling & Wals, 2008; Scott & Gough, 2003) that is, to promotion of a sustainable world served by experts or of the worldview of the particular teacher in charge. This criticism has been followed by a lively debate in the research field addressing the problematic relationship of democracy and sustainable development. The policy documents (e.g., UNESCO, 2006) also articulate the need for *harmonious relations* between social-cultural, economic, and environmental goals to envision sustainable development a challenge given the conflicts of interest that arise when one faces the realities of the modern way of living.

We are interested in studying how group discussions of sustainable development show possibilities (or not) for developing different views of sustainability in an educational context. In this paper, we start by exploring some of the complex and conflicting interpretations inherent in the concept of sustainable development. A *conflict reflection tool* is developed to analyse in what respects various interpretations of sustainability might be developed in a discussion; we pay attention to both different perspectives (*what* is discussed) and the ways the language is used (*how* the utterances interact in the discussion). We apply the conflict reflection tool to a discussion about climate change and food consumption/production among seven teachers. We conclude with a discussion on the conflicting view of the integrated dimensions of sustainable development in relation to an agonistic pluralistic approach and its relevance in an educational context.

A Pluralistic World Mirrored By Pluralistic Views

The world and its modern cities are a mosaic of societies, cultures, and lifestyles, each one characterized by different views of life. Various political, cultural, ideological, and religious beliefs form modern views of development and views of nature. Further, there are different ways to define *development* and *sustainability* and to articulate the ways they are related. Consequently, it is difficult to agree on "beneficial" actions for a "sustainable future" (Bonnett, 2002; Huckle, 2006; Sauvé, 2002; Stables & Scott, 2002). In addition, Scott and Gough (2003) emphasize the complexity and uncertainty associated with future questions of sustainability, which make proclamations about the correct or best decisions of sustainability a utopia. According to Scott and Gough (2003), sustainability should therefore not be seen as a predefined outcome to achieve but rather as a way to live and learn from different views, experiences, and practices. The conflicting perspectives of different human interests could in this way be an important part of understanding why environmental problems arise (Breiting & Mogensen, 1999).

This awareness has highlighted a need to reflect different opinions, knowledge, and conflicting views when *educating* for sustainable development. Hence, the pluralistic approach in ESD has been stressed, especially in the Nordic countries of Europe (Breiting, Mayer, & Mogensen, 2005; Jensen & Schnack, 1997; Lundegård & Wickman, 2007; Öhman, 2006; Rudsberg & Öhman, 2010). This pluralistic view, stresses the focus of a democratic education (Scott & Gough, 2003; Rudsberg & Öhman, 2010; Breiting, Hedegaard, Mogensen, Nielsen, & Schnack, 2009), not emphasizing a particular standpoint but promoting different interpretations of sustainability and education.

Conflict or Consensus

ESD can therefore be perceived as a coin with two sides. One side represents the desire to encourage "sustainable thinking" by promoting harmonious relations between interests reflecting the environmental, economic, and social-cultural dimensions of sustainable development and thus moving towards consensus. On the other side is a desire to scrutinize the conflicting interests. Lundegård and Wickman (2007) emphasize the importance of teachers creating opportunities for students to become involved in discussions as a way to experience some of the different

interpretations and complexity inherent in issues of sustainable development. We agree that bringing up conflicting perspectives on sustainability is an important way to become aware of the concept's numerous and complex interpretations, but it is also essential to recognize the "political" aspect of it that is, the tension between discourses and personal views. There is a tension between promoting consensus view as a part of social decision-making and the desire for exploring the pluralistic views of sustainability. Participatory approaches and deliberative discussions are methods used as a way to deal with those issues (Lundegårdh & Wickman, 2007; Rudsberg & Öhman, 2010).

However, applying participatory approaches in education as deliberative discussions does not necessarily mean that the content of the dialogue becomes more diverse (Rudsberg & Öhman, 2010). The participatory approach could, for example, be a "polite" or hegemonic consensus view, not exposing any conflicting interests, or as Laessö (2010) argues, it could be a way of avoiding deep ideological conflicts. Öhman and Öhman (2012) show that conflicts of interest are absent when upper secondary students, given the task of constructing a sustainable neighbourhood in a future city, focus on the goals shared by the three dimensions of sustainable development. The students' work and their way of talking illustrate these harmonious goals without addressing any conflicting or differing interests. On the other hand, Rudsberg and Öhman (2010) show that the teacher can play an important role by introducing different perspectives into a discussion, adding new views to the students' reflections, unfolding some of the complexity in those questions. A democratic approach to education could in this way, according to Rudsberg and Öhman (2010), involve confronting different values, ideas, and points of views in relation to a particular opinion, combined with the opportunity to reflect in collaborative settings. It is an interesting question how and whether conflict or consensus perspectives are important in relation to a pluralistic illumination of sustainability.

Conflictual Consensus and Agonistic Pluralism

To orient this duality of consensus and conflict, we turn to Chantal Mouffe's (2000) alternative to the deliberative approach with a consensus goal. Mouffe discusses *agonistic pluralism*. The deliberative consensus is, according to Mouffe, built on beliefs of the sovereignty of the rational argument and a consensus based on the "universal good" an approach that Mouffe questions. To her there is no universal or rational best argument in political disputes; rather, there are only different ethico-political interpretations. Agonistic pluralism strengthens the focus on the differences (the "political"), approaching the adversary as a respected "enemy": not as an antagonist to overcome and persuade but as an *agonist* who may have legitimate conflicting opinions. To view the most "rational" argument as the logical end of a democratic process in political debates is, according to Mouffe, a way to confirm hegemonic discourses. By considering the rational argument superior, one risks declaring other interpretations unintelligent and understanding differences as illegitimate opinions instead of as different ways to value things— for example, different ethico-political values become different ways of interpreting liberty and equality. Mouffe underlines the significance of making conflicting views and interpretations visible and of legitimizing them. To promote a radical democracy, Mouffe would bring in the political, defined as "the dimension of antagonism that is inherent in human relations" (p.15). The adversary is not seen as someone who needs to be convinced of the "correct" opinion; adversaries, rather, treat different positions and opinions with the respect due a legitimate opponent defending a diverging opinion. The way Mouffe elaborates on agonistic pluralism and conflictual consensus—as consensus on the principles but disagreement about their interpretation—provides an alternative way to understand how pluralistic views and opinions on an issue can develop in social context.

We find Mouffe's approach fruitful for a better awareness of hegemonic discourses, which could suppress views that diverge from the consensus order. Even so, we uphold

discussions and dialogue as ways to get to know different views of the political. It is in the meeting with alterity that questions of difference and conflicting views emerge.

The Conflict Reflection Tool

Who would oppose sustainable development? It is a goal difficult to object to. But the concept includes conflicts and complexity, and it would perhaps be more interesting to explore the borders between different interpretations in an educational context than to examine the final "answers." It is in the conflicting borders that it becomes possible to expand one's understanding of different interpretations and views. Taking inspiration from Mouffe's views on conflictual consensus, we start by discussing and problematizing the complexity and conflicting interpretations inherent in the concept of sustainable development. In this we depart from earlier theoretical models of sustainable development (Barbier, 1987; Herremans & Reid, 2002; Breiting et al., 2009), analysing how conflicts are stressed in relation to sustainability. This first segment represents the content focus of our examination, what is talked about—in the sense of differing and conflicting interpretations of sustainable development. In the second part of the conflict reflection tool, we focus on language use. "Functions of speech" in Wertsch's (1998) interpretation of Bakhtin and Lotman, constitute a useful framework for understanding how speech genre affects the ways different voices become involved in and develop in a conversation.

These two perspectives constitute the foundation in constructing a reflection tool to analyse discussions, our conflict reflection tool. In the following text we start with exploring the concept of sustainable development, from different points of views.

The Content Element of the Conflict Reflection Tool; Unfolding Conflict Perspectives in Some General Theoretical Models of Sustainable Development

Policy, as well as educational documents, emphasizes the need to integrate the environmental, economic, and social-cultural dimensions of sustainable development into a unified approach. How conflicting interests or systems are represented in general models of sustainability is of interest for understanding the ways different views of sustainability are valued. In the following text we take a closer look at this integrated perspective on sustainable development—from a conflict perspective. Our first point of departure is from an economic view; with Barbier's Venn model (1987), followed by a more ecological focus as in Sadler (1990) on water management (a practical example of decision making),which is interpreted by Herremans and Reid (2002) to an educational context. This is followed by a societal focus on human conflicts that arise regarding the use of natural resources—that is, "conflicts of interests" according to Breiting et al. (2009).

Viewing Sustainable Development from an Economic Point of View

One of the first attempts to visualize the complexity of sustainable development was made by Barbier (1987). He developed an oft-referred to Venn diagram of competing human-ascribed goals in terms of sustainable economic development, with a focus on a Third World perspective. The economic development of the Third World is here seen as the key for more sustainable development. The diagram refers to the process of trade-offs between the three systems of mutual dependence: the biological system (genetic diversity, resilience, biological productivity), the economic system (satisfying basic needs, enhancing equity, increasing useful goods and services), and the social system (cultural diversity, institutional sustainability, social justice, participation). This model shows that sustainable goals come into conflict when resources are utilized within or between the different systems. Different priorities emerge depending on how specific goals are valued. The cross section where the circles overlap is a theoretical *vision* of economic sustainable development, an attempt to maximize the goals across the systems through an adaptive process of trade-offs (figure 1). In other words, this vision rests on an attempt to optimise each goal under a sensitive compromise in mutual exchange between the three goals.

Since economic sustainable development is founded on sustainable conditions for social and environmental systems, this vision strives toward dynamic compromises in relation to the three systems and the particular context.
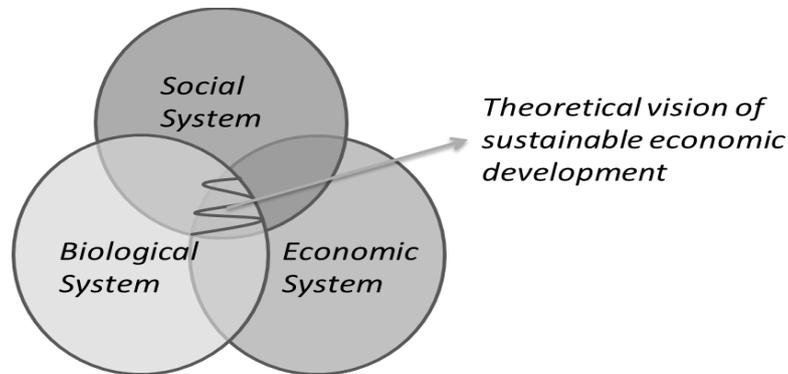

Figure 1. Interrelations of the biological, economic, and social systems, interpreted from Barbier (1987)

According to Barbier (1987), this means maximizing the sustainability goals for all the dimensions and objects at all times is seldom possible in reality, since aspects of these goals often conflict. For example, increasing useful goods as well as genetic diversity could raise a conflict regarding how to use forest resources. Another example of conflict could be introducing new techniques versus relying on traditional skills. Even intrasystem goals may come into conflict, such as improving the status of women and preserving traditional values. This means that choices must be made about which goal to prioritize. The problem of how to compare the values is key, likewise a complex challenge. According to Barbier, priorities among goals have to be adaptable to individual preferences, social norms, ecological conditions, and so on, as well as to changes over time and to local and cultural conditions. This highlights some of the value-based foundation of sustainable development and the conflicts of interest in complex questions. The concept of sustainable economic development comprises a wide spectrum of political interpretations. In contrast to the conventional consensus on economic development limited to optimizing GDP Barbier emphasizes economic sustainability as economic *development* with a focus on development in the Third World. Moreover, Barbier recognizes the problem of valuing nature as an economic resource. This is highlighted as something to discuss, along with human and social values all of which are difficult to put into monetary frames, but in Barbier's interpretation, such discussion is a desirable goal.

Barbier's way of comparing different values invites one to employ comparable measurable units (i.e., money). This in turn starts a philosophical and ethical discussion about the value of life, society, and nature. Ecosystem services (Costanza, d'Arge, de Groot, Farberk, Grasso, Hannon, Limburg, Naeem, O'Neill, Paruelo, Raskin, Sutton & van den Belt, 1997) represent a concept that could be seen as an answer to this monetary value comparison, a concept open to a lively debate. Whether education for sustainable development should recognize nature and society through a lens of competitive economic values is another political and ideological question. In the recently developed steering documents for the Swedish educational system (National Agency for Education, 2011), ecosystem services are mentioned as a concept for students to study.

Viewing Sustainable Development from an Ecological Point of View

In Sadlers (1990) interpretation, the environmental thresholds are seen as key to sustainable development - even if the interdependence of the three systems is emphasized. Biophysical processes and cycles are finite and to some extent irreversible; therefore, they differ in kind rather than in degree from socioeconomic boundaries.

Unlike Barbier's (1987) more theoretical reasoning, Sadler (1990) presents an example that places sustainable development into a local context, applying general policy definitions to the practical example of water management and political decision making in a Canadian province. General definitions are nailed down at a local level, seen as a triad of values to be met at some minimum level: "sustainable development as a common wealth of values and policies" (Sadler, 1990, p. 22).

Even if decision making for sustainability is seen as combining multiple ends, multiple means, and multiple participants with diverse values and interests, there is an emphasise put on the necessity to reach consensus views. Herremans and Reid (2002) use Sadler's model of sustainable development to work out a sustainable triad concept for educational use. With this point of departure, Herremans and Reid redefine system goals for educational contexts as *dimensions*. To use dimensions instead of systems allows the perspectives to more closely align with a personal, everyday, and educational context (figure 2). A consensus-oriented desire for solutions is indicated: "The sustainability domain is the area in which an organization can operate and still maintain a consistent and suitable harmony among the three main dimensions" (Herremans & Reid, 2002, p. 17).

Viewing Sustainable Development Through Societal Conflicts Of Interests Between Humans

In the report from the Muvin project (Breiting et al., 2009) environmental and sustainable problems are discussed as *conflicts of human interest*, mainly in relation to the use of natural resources. This approach promotes a democratic action competence and active citizenship. Breiting et al. (2009) stress the different levels of conflicting interest in society as follows:

- *Personal dilemmas:* On the individual level, conflict exists between incompatible needs and wishes.
- *Interpersonal conflicts of interest:* On the social level, conflicting interests exist between various groups or individuals.
- *Structural conflicts:* Conflicts arise at the societal level between political decisions and market forces or economic mechanisms.

A personal dilemma could be the conflicting voices within a single person when arguing with oneself over a decision—for example, whether to use the car and save time or to use the more environmentally friendly community buses. Interpersonal conflicts could be exemplified by a conflicting interest between people's use of a resource, such as the utilization of a forest; consider the divergent interests of a timberman, a birdwatcher, and a mountain biker. Structural conflicts work on a more institutional level. They could be seen as different systems built into and between societies and groups. A focus on human conflicts of interest (i.e., personal, interpersonal, and structural levels of conflict) emphasizes that everyday life involves values that lead to decisions that affect sustainability because those values are related to priorities at intra- and interrelational levels.
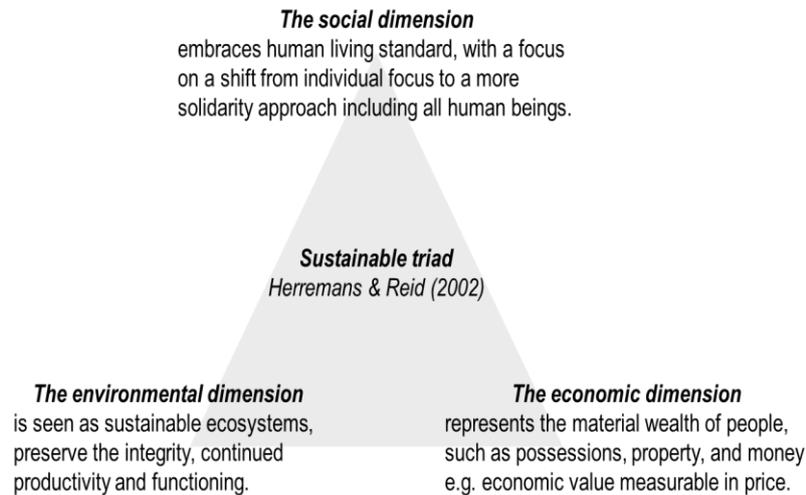
The social dimension
embraces human living standard, with a focus
on a shift from individual focus to a more
solidarity approach including all human beings.

Sustainable triad
Herremans & Reid (2002)

The environmental dimension
is seen as sustainable ecosystems,
preserve the integrity, continued
productivity and functioning.

The economic dimension
represents the material wealth of people,
such as possessions, property, and money
e.g. economic value measurable in price.

Figure 2. The concept of sustainable development as a commonwealth of values, interpreted from Herremans and Reid (2002)

Summarising the Content Element of the Conflict Reflection Tool

The review of the different models actualizes Mouffe's ideas of conflictual consensus. The different models described share the aim of clarifying that goals or dimensions are interrelated and must be mutually valued in decisions as a consensus on the vision of sustainable development but with differences in interpretation regarding what and how to prioritize and how to define conflicting values. Barbier and Breiting et al. focus on clarifying different views in conflicting values and the priorities of those views. Sadler and Herremans and Reid strive rather for consensus and mutual adaptations in decisions involving conflicting interests. To construct the content element of the conflict reflection tool, we combine the foundations of those different models of sustainable development in order to reflect on several different approaches to the sustainability concept (Figure 3).

The Speech Element of the Conflict Reflection Tool; Focusing on Language Use

So far we have interpreted conflicting perspectives inherent in the concept of sustainable development by building on some generalized models of the integrated dimensions. To analyse how different views may emerge and develop in social context, we now turn our focus to language use.

   According to Bakhtin (1986), all communication is by nature dialogic; there is always a sender and always a receiver of an utterance. This means that all true communication involves at least two voices. The utterance is addressed and then adjusted by a sender and is interpreted by the receiver. In a dialogue the utterances are built on each other in a chain of speech communication. We claim that situated practice reflects the wider social discourse; following Bakhtin, we mean that each "utterance is filled with echoes and reverberations of other utterances" (1986, p. 91). In "Discourse in the Novel," Bakhtin (1981, p. 293) describes his view of the dialogic nature of language:

   The word in language is half someone else's. Language is not a neutral medium
   that passes freely and easily into the private property of the speaker's intentions;
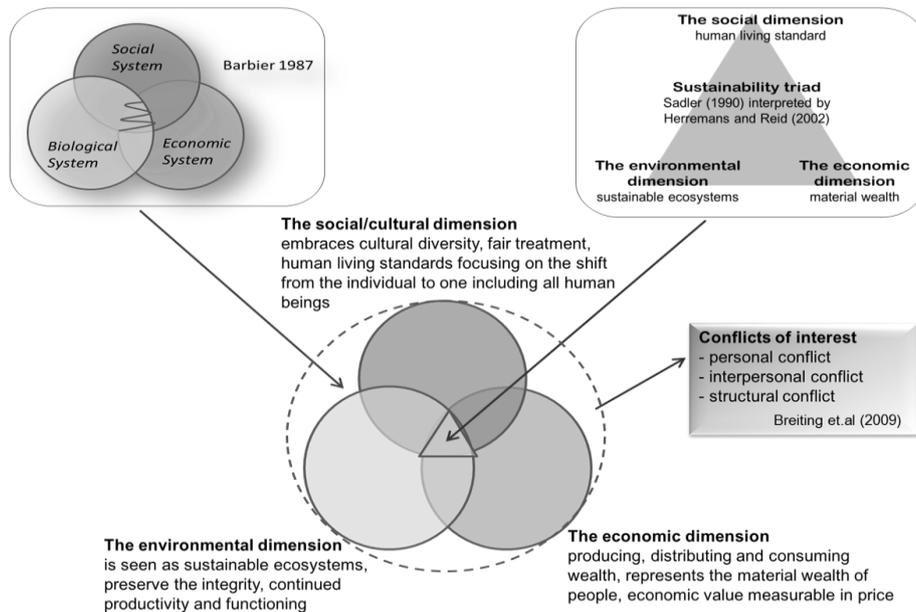   it is populated overpopulated with the intentions of others.

Figure 3. The content element of the conflict reflection tool developed in this study

Note. This model brings together:
  - the economic view of Barbier (1987); economic focus with a conflict view
  - the environmental view of Sadler (1990) and Herremans and Reid (2002); environmental focus with consensus view
  - the human conflicts view of Breiting et al. (2009); focusing environmental problems as conflicts in society between humans at different levels.

In this way, the use of language reflects echoes of different voices; it is polyphonic. Wertsch (1998) refers to the function of speech (interpreted from Lotman, 1988) in a way that we regard useful as a lens for analysing how different views of sustainability can develop in a discussion and in social meaning making. According to Wertsch's (1998, p. 115) reference to Lotman (1988):

> *Dialogic function* [of speech] tends towards dynamism, heterogeneity, and conflict among voices: the focus is on how an interlocutor might use texts as thinking devices and respond to them in such a way that new meanings are generated.

> *Univocal function* [of speech] tends towards a single, shared homogeneous perspective: to "receive" meanings as the sender defines it, without any new interpretation.

The terms *dialogic* and *univocal* for functions of speech should be seen as tendencies that operate in dynamic tension with each other in a conversation. The focus on the dialogic function pays attention to how utterances are reconstructed in a relational dialogue. The *dialogic function* is thought generating, in contrast to the univocal function, which characteristically works mainly to transmit information. *Authoritative discourse* is related to the univocal function of speech:

"The authoritative word demands that we acknowledge it, that we make it our own" (Bakhtin, 1981, p. 342).

The functions of speech are helpful for studying the conditions necessary for alternative utterances (viewpoints) to become "thinking devices"—for exploring, in Mouffe's terms, what is needed for a different statement to be legitimized as a voice of alterity. As Mouffe (2000) explains, in agonistic pluralism utterances are legitimized when responded to with respect, despite differences in viewpoint. With this in mind, an utterance that is respected as something to reflect upon (treated as a legitimized utterance), must be set in the dialogue with some kind of response from the interlocutors. Hence, we study the use of language and its dialogic function— that is, the use of utterances and the ways dialogues develop.

The dialogic function of speech represents a dialogue in which utterances are built on one another without necessarily sharing the same definitions or opinions; instead, they are used as thinking devices to reflect upon. In our view, the genre of dialogic speech can be seen as a prerequisite to effective agonistic pluralism in a conversation. The function of speech reveals how we use one another's utterances and whether we make them our own, populate them with our own interpretations, or resist them.

In line with Bakhtin's interpretation, we define an utterance not as limited to the extent of a linguistic unity but rather as a "link in the chain of speech communication" (Bakhtin, 1986, p. 84). The utterance is not to be seen as a solitary unit but as a part of a meaning-making context. According to Bakhtin (1986), the length of an utterance that stands on its own (but is connected to the content) is "determined by a change of speaking subjects, that is, a change of speakers" (p. 71). This means that the analysis is focused on the relationship between utterances. We use the idea of the function of speech (Wertsch, 1998) as a framework for understanding the role of language use in relation to how perspectives in a discussion develop.

Conflicting Perspectives and Language Use in Reciprocal Action

The aim with the conflict reflection tool is to focus on both content and language use in a discussion in which different views and voices are involved. We now apply this conflict reflection tool to an empirical example in order to analyse how the conversational dynamics work in relation to agonistic pluralism in a particular instance. Empirical studies of participatory and pluralistic approaches in educational school practice are still rather limited in number (Rudsberg & Öhman, 2010; Jonsson, 2007; Gustavsson & Warner, 2008). The present study aims to contribute to this field of research.

We move from a broader societal perspective of sustainable development to a local, situated discussion between teachers. Hence, to study circumstances in which different viewpoints and interpretations might develop in a conversation about sustainable development, we pay attention to *what* is uttered and to *how* utterances develop. We analyse an empirical example from a Swedish context in which seven secondary school teachers, representing different school subjects, discuss climate change. We are interested in the ways talk is used to make meaning. In this approach, language and its expressions are seen as shared. In this discussion, what teachers say and how they use utterances are analysed to reflect on the ways that the conversation socially constructs possibilities for developing an approach of agonistic pluralism. In other words, we analyse the possibilities for a discourse of respect for alterity that legitimates different viewpoints in the ongoing discussion.

The Case Study: A Discussion among Teachers on Sustainable Development

Through the use of a case study we analyse how different viewpoints develop in a discussion, thereby demonstrating how the conflict reflection tool works. In relation to teachers' discussions of global warming, we study how teachers discursively handle the intertwined perspectives of sustainable development. We address the following research questions: How do different or new

viewpoints emerge in the course of discussion? How are viewpoints put forward or not put forward? The conflict reflection tool allows us to consider the interaction of both the content and the speech of the conversations.

Setting The Scene

The data for this study were taken from a seminar about climate change between seven subject teachers from secondary school. The primary author of this study was one of the teachers of an in-service course on ESD at a Swedish university, and the opportunity arose to arrange a seminar. Secondary school teachers with different subject backgrounds and teaching experience were put together in a seminar group.

The participants all read the same book about climate change and the complex question of responsibility in relation to greenhouse gas emissions. Each participant prepared a discussion question of personal interest concerning the literature, and each participant was to lead the debate on his or her own question, ensuring that everyone took part in the discussion. This arrangement made possible a study of the teachers' "natural talk" about questions of sustainable development. The seven teachers (four women and three men) represented the subject backgrounds of natural science, social studies, language, mathematics, and home economics. The seminar dealt with seven discussion questions and lasted for two hours, including a twenty-minute break. The first author's role at the seminar was that of an observer responsible for time keeping and administration. Involvement in the research study and the teachers' agreement to participate were confirmed in advance. An alternative seminar was available to teachers who did not wish to be included in the study. The seven seminar questions followed one another in natural transition throughout the discussion as a whole. Each question was discussed for ten to fifteen minutes.

The empirical material of this study consists of recorded audio files from the seminar that have been transcribed. The conversation was interpreted and written down as accurately as possible (verbatim transcription), including writing down the conversation as spoken language without grammatical corrections. In the transcripts quoted here, the Swedish language has been translated into English.

Analyses and Results

The conflict reflection tool made it possible to reflect on when perspectives changed in the discussion. Analyses of the discussion focused on the conflicts between interests of economy, environment, and social/cultural dimensions. Those dimensional conflicts were related to conflicting levels (personal, interpersonal, structural), and thus the dynamic interaction between dimensions and conflicting levels could be studied. The overall result shows that different dimensions as well as various conflicting levels serve as catalysts when divergent viewpoints of an issue developed in the conversation among the teachers. Likewise, the analyses take into account the teachers' use of speech genres in presenting different perspectives. The following pages present text analyses and results from the study.

The first examples of transcripts (1–3) deal with food consumption and food production in relation to greenhouse gas emissions. Transcript 1 comes from a sequence that began with this question: Why don't we use more locally grown food products? Transcripts 2 and 3 record discussion of this question: Who is responsible for greenhouse gas emissions? Even though the conversations involve two different questions, they all connect to the discussion of human food consumption and production in relation to greenhouse gases; this was a common thread in the discussion as a whole. Each utterance was analysed in terms of content, function of speech, and relation to other utterances in the conversation.

The utterances composing the three conversational sequences below represent an example of a discussion characterized by the dialogical function of speech. In the first sequence, the teachers discuss whether people should consume only locally produced fruit. We follow

Nils's (the participants' names are pseudonyms) utterances and relate them to those of the other participants. The sequence starts with Nils, whose comment indicates a personal conflict, the dilemma of the environmentally friendly behaviour of purchasing local produce but having to spend more money on it than on imported fruit, which here is seen as a less environmentally friendly product. Bold type in the excerpts indicates the value relations built into the environment–economy conflict.

> Nils: I think it's a shame that people are not better at this [buying local produce] . . . for example, this *svenskt sigill* [certified Swedish product] and locally produced, etc. but at the same time, of course it could be terribly expensive . . .
>
> Alice: . . . Mm.
>
> Sven: . . . Yes and . . . why do we have fruit like bananas, kiwi . . . all the things that really do not grow here naturally?
>
> Alice: . . . Mm.
>
> Sven: . . . Why oranges? Why do we import that kind of fruit? Why can't we use our own fruits? And, the same thing as you said, huh . . . why is the food we eat not more seasonal?
>
> Ingrid: . . . Yes . . .

In this context Nils's utterance is presented as a statement to be responded to, and thus it is open and can gain value in the context of the seminar. The following utterances build on Nils's concern, but the personal conflict (expensive fruits but environmental friendly choice) is not really developed; rather, Nils's utterance gives way to development of the question why "we" import fruits at all when we could choose to grow and consume naturally grown fruits indigenous to the area. Alice confirms Nils's utterance with her *Mm*, which is continued by Sven's *yes* and followed by his own view, questioning the import of fruit. The teachers are developing the content by building on each other's utterances. The environmental dimension comes to be emphasized in a global context (less transport), but the economic consequences are left behind. Statements are put into the dialogue but still mostly as questions, open for responses. In this example we use the dimensions to see how the focus shifts between an environmental (in this case, greenhouse gases and global warming) and economic (in this case, price policy) dimension to value from. The conflict of interest starts on a personal level that later extends towards conflict on a structural level (global trade). There is a consensus in the discourse about questioning the value of imported fruits.

As the discussion progresses, new relations emerge between the teachers' utterances as they develop the content of the discussion. Still, the conversation allows participants to turn back and pick up former utterances, mirroring them in the "new light" of the forthcoming perspectives. When the question *Who is responsible for greenhouse gas emissions?* is introduced, the discussion moves from a focus on the responsibility of leading politicians to that of the "common citizen" and starts to deal with differences between lifestyles in the world. In this context Agnes develops an idea from the preceding discussion about imported fruits into a new value-laden perspective, approaching an interrelational level. Bold type in the excerpts denotes links to the earlier discussion. Agnes develops her thoughts in this way:

> Agnes: If you think about global hectares and overconsumption, they [people in India] are far from affecting [the earth] the way that we [people in Sweden] do. It's also something you have to think about if we, who in reality are the "bad guys" getting started with this to make us aware. *I do not need all this stuff, all the food from all around the world* . . . and then maybe global trade could be politically governed in some "good way."

Agnes is here referring to the earlier utterances indicating that fruits imported to Sweden are seen as unnecessary. She uses "we" for those in the Western world and "they" for those living in India. Through the words *I do not need* and *politically governed*, Agnes connects herself to the context and indicates that political governance of international trade could perhaps work as a tool for change. However, this utterance draws a comment from Nils, who introduces new viewpoints:

> Nils: Yes, but now we are on thin ice if we start talking about trade, as we did before. And then we say, all of a sudden, "No, you may not sell your pineapples, or passion fruit, or other things, but be sure to buy our surplus food" and so on. So then, we start talking about customs tariffs, trade barriers.
>
> Ingrid: Mm . . .
>
> Nils: Because that's what we're talking about, right?
>
> Ingrid: Mm, in global trade, it is. The question is . . .
>
> Nils: Yeah right, somehow, and, uh, again . . . I believe in this, free market and capitalism . . .

When the discussion takes on the economic dimension on a system level (i.e., governed trade), the issue of imported fruit suddenly appears in a new context; it raises the question of access to global trade. The utterances *free market* and *capitalism* move the issue into a new political arena. The picture becomes more complicated, valuing greenhouse emissions not only in terms of the environmental dimension but also in terms of economic development, global trade, and equality, introducing a more complex structural level of conflict. Thus, the discussion presents opportunities to value imported fruits in different ways.

Analysing the discussion through the conflict reflection tool highlights when the discussion opens new possibilities for considering an issue's values (Figure 4). The conflicts between different interests are revealed—in this case, climate change, personal economy, poverty reduction—and different values can develop when dimensions and conflict levels change. In this case Nils, who at first talked about the importance of locally grown fruits, later emphasized the importance of free trade and therefore imported fruit. The personal, everyday dilemma (of prioritizing an environmentally friendly choice connected to greenhouse gas reduction) is expanded to a global level when the various dimensions and conflict levels are integrated.

These three discussion sequences illustrate the dialogical function of speech, characterized by a thought-generating tendency towards dynamism, heterogeneity, and conflict among voices. The interlocutors present their utterances, inviting others to continue and develop them. The utterances build on each other through the dialogue as they are brought up in relation to new perspectives. The teachers in this study are involved in a specific speech genre—a seminar with the aim of discussing and exchanging viewpoints—that promotes an open and dialogic use of the language. Hence, it would be interesting to see what characterizes situations when the discussion is closed to responses, when a more univocal function is at work.

Conflict of interests
1. Personal dilemmas
Should I buy the environmental friendly and locally produced fruit *or* the less expensive imported?
2. Interpersonal conflicts
we: 'the rich world ' / *them*: 'the third world'
3. Structural conflicts
Trade barriers; a way to protect and empower local market, at the same time obstruct access of the trade market for less economically developed countries.

2. The social-cultural dimension
eating habits
Western consuming lifestyle affects the climate badly. We should not consume "*all this food from all around the world*".
→ Customs tariffs?

1. The environmental dimension
emission of greenhouse gases
No import of fruits to Sweden. Favouring locally produced fruits to lower greenhouse gas emissions.

3. The economic dimension
economic development, equity
Facilitate the import of fruits to Sweden, to favour access to the global market for less economically developed countries → No customs tariffs.
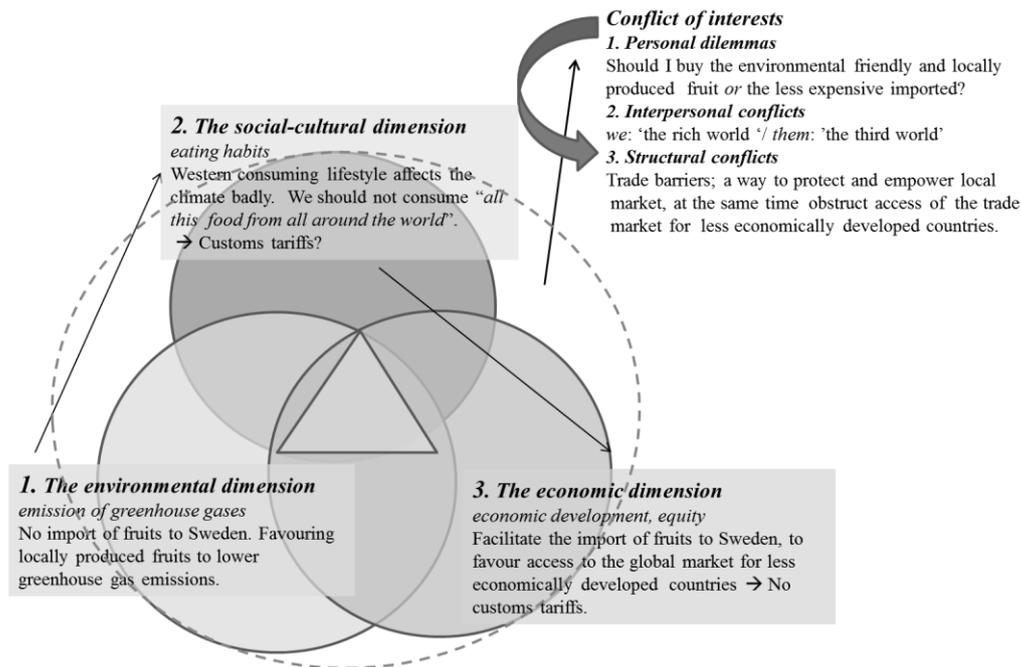
Figure 4. Following the arrows in the figure show how the discussion of this study developed through the different conflicting perspectives. How pluralistic views of sustainability become legitimized, and developed in discussions is likewise a question of how the dialogic speech function is in use by the interlocutors. The teachers' discussion of this study shows how interpretations of an issue can be re-valued when the discussion goes through the environmental interest (box 1), to emphasizing the social- cultural dimension (box 2) and towards economic interests (box 3) when the dialogic speech function is in use

Authoritative Utterances

In some discussion sequences, the teachers use a "fact-based" genre. The following sequence illustrates the introduction of a new discussion question: Have we passed the point of no return? Nils introduces the background to this question.

> Nils: The temperature has already increased to the level at which incredible amounts of greenhouse gases are released from the Arctic tundra, and *there is absolutely nothing* we can do about it. The increased temperature of the ocean makes the largest carbon sink we have, our ocean; the carbon dioxide sink means that there is a lot of carbon dioxide in the form of carbonic acid in the ocean . . .
>
> Sven: Mm.
>
> Nils: … it decreases. Warm seas can't hold as much carbon dioxide, which means that the sea will release incredible amounts of carbon dioxide. This means that what we release is extremely minimal in comparison. . . Stop talking nonsense on various actions for cutting greenhouse gases. We need to start acting to climate-proof our cities and homes. This will come, now!

This utterance is an example of the more univocal function of speech that tends towards a single, shared homogeneous perspective. Words like *absolutely nothing we can do* are uttered in

an authoritative way, signalling that this perspective is not to be questioned. This univocal tendency in speech principally occurs when presenting "facts," concepts and patterns related to scientific discourse. This is a way to convey meaning in a clear and "right" way. Later in this discussion another example arises in which the participants are eager to explain "facts" as a means of guiding the others to make the "right" choice:

> Rolf: All energy is converted into heat. Whatever you do, we will warm this planet. Stop taking baths! To heat one litre of water takes so much energy. . . I do not want to work that much, so it's terrible. If only people knew, they would go without a bath quite often, not wasting warm water washing and whatever.
> Nils: Yes, but now we are way off. . .
> Rolf:… Think about it. . .
> Nils: … Now we are way off because even if we all stopped taking baths . . .
> Rolf: . . . No, no. . . you can *count* exactly.

In this sequence "facts" are used to support a certain choice, that of taking fewer baths. When Nils tries to get through with another view of this interpretation—"*even if we all stopped taking baths*"—the response is a certain "No, you can *count* exactly." This utterance eliminates the possibility of further discussion. In a dialogue the particular words in themselves do not predict how the conversation turns out (i.e., whether different viewpoints are allowed); there are always different influences determined by context. But what one can see here is that interlocutors are trying to develop different viewpoints and interpretations in the conversation. In this example, the speaker uses fact-based or scientific discourse as a tool to privilege an utterance. This establishment closes this part of the discussion, shutting out other viewpoints. The univocal function of speech is used to convey a single meaning connected to the "scientific" explanation.

Conclusion and Discussion

In this study we have been interested in how different viewpoints might emerge and develop in a discussion of sustainable development. Since sustainable development as a concept is complex, imbedded in ideologies and different views of life, allowing discussion of different interpretations could be an important part of a democratic education (Rudsberg & Öhman, 2010; Scott & Gough, 2003).

With the development and use of the conflict reflection tool, dynamic relations of the sustainable concept unfold, showing how conflicting perspectives may challenge ongoing discourses. Analyses using the conflict reflection tool show that the combination of *what* is said and *how* in analyses of the teachers' conversation generated opportunities to reflect on how viewpoints and interpretations may be challenged, illuminating issues from different perspectives. Different conflicting levels owing to conflicts of interest (i.e., personal, interpersonal, structural) were exposed within the *same* dimension of sustainability (environmental, economic, or social-cultural). Likewise, viewing or valuing an issue from *different* dimensions of sustainable development reveals conflicting views despite the level of conflict of interest.

Consequently, there is something to be gained by visualizing the dynamics of these different interpretations of conflicts in mutual relation to one another; such an approach could provide catalysts for different perspectives in a discussion. Jonsson (2007) emphasizes the necessity of the teacher's own ability to possess "holistic views," "complex thinking," and a "pluralistic attitude," since these are important pieces of the pedagogical content knowledge for ESD. To understand how those emerging perspectives may then be further developed in the discussion, the theoretical notion of agonistic pluralism (Mouffe, 2000) can be applied to study

how utterances are treated in the empirical data. In these analyses the function of speech (Wertsch, 1998) was used as a tool for identifying dialogic moments in the discussion.

The results of these analyses reveal something about this particular discussion's character and about how the conflict reflection tool (by including speech function) could open up some dynamics from the use of language. When a dialogic speech genre was identified, different interpretations could evolve and be revalued in conflicting views. In contrast, a univocal speech function was identified when a fact-based, authoritative speech function was dominant and the discussion was thus closed to different interpretations. Whether this is a tendency is a question for further research. Based on the analytical work of this study, we find this combined method of *what* and *how* in discussions of sustainability promising for future studies.

What role the harmonious goals of the intertwined dimensions play in relation to an open view of different viewpoints is a complex question. How consensus orientation in education for sustainable development can avoid revealing potential ideological differences and conflicting views has been discussed in earlier studies (Öhman & Öhman, 2012; Læssøe, 2010; Gustafsson & Warner, 2008). To be aware of how to get possibilities for different viewpoints to emerge, to be exposed and later to be developed could be a way to work if the goal is an agonistic or pluralistic approach in questions of sustainable development. The use of agonistic pluralism in this study provides a useful lens for considering ways of discussing an issue to develop an appreciation of others' viewpoints and values. This makes clear that the intention of a discussion is not to win a debate, but about a conversation where alternative views become legitimized and different voices and opinions can be heard. It is our belief that using the conflict reflection tool is one way to facilitate the construction of situations enabling diverse views to emerge and to be valued in social contexts such as discussions. Through this awareness, discussions may become an important part of a participatory approach promoting open-ended outcomes, open to be further valued.

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