Dialectical thinking and comparative text analysis: Application to the topic of the green economy.

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Abstract

Analyzing texts other than interview transcripts based on the DTF Framework taught at IDM is a new application of CDF. Our paper presents an example of dialectical text analysis with a focus on i) the analytical framework and CDF methodology and, as analysis content, ii) key concepts of green economy. Our article compares two institutional policy documents, one authored by the European Commission, and one by the United Nations Environmental Programme (produced in preparation to the UN Sustainable development Conference in Rio de Janeiro, July 2012. With the abstract seen below, we would like to invite the reader who wants to go deeper to read the paper found at http://www.interdevelopmentals.org/resources-teleseminars-free.php

The methodology of dialectical text analysis
Conclusions from the first part of this paper are that the CDF framework can be applied to written documents whatever topic they may deal with. The four classes of dialectical thought forms provide the analytical framework for measuring thinking processes documented in texts, while the four quadrants of integral theory provide a framework for seeing the world in terms of different perspectives. When we assume that each of the integral perspectives can be articulated in terms of the four quadrants of dialectic, we can determine the degree of dialectical sophistication with which each of the four integral perspectives is articulated in thought expressed in text. The limit of text analysis is the missing interlocutor, thus any possibility of probing for more differentiated thought.

Key concepts of green economy and governance
The second part of the paper elaborates the CDF approach to the sample texts chosen focusing on two base concepts, i.e., green economy and governance. In the paper, we select 12 text excerpts, score them and comments on them in some detail. The Cognitive Score of the European Commission text was found to be [22, 55, 10; 13 (%)], with a low System Thinking Index of 13%. This finding entails that the Commission text tends to move within a given, complex but rather static context of European policy making, foremost driven by institutions that regulate and introduce new instruments and incentives. By contrast, the Cognitive Score of the UNEP text was [21, 21, 26; 32 (%)], with a System Thinking Index of 32% (more than double). The UNEP text compares systems in order to identify specific options for action by governments using mainly regulatory power. The text tends to advocate for governance using political action, and this is reflected in the higher CDF Systems Thinking Index documented in the UNEP text.

Better thinking for sustainability
The dialectical text analysis also shows absences (what is missing) in the two policy documents. Such an analysis can help overcome presuppositions, promote more inclusive thinking, and open forums for dialogue; -- all these are ingredients of dialectical thinking in politics. For bringing this about, we need politicians to take a lead in public debate and functions, we also need to transform existing discussion forums in order to provoke critical conversations about our assumptions, invite and

induce practical knowledge, and prepare common ground for transformative collective actions.

Conclusion on the CDF framework

Dialectical text analysis is an expansion of the present scope of CDF as taught at the Interdevelopmental Institute (IDM). At the moment CDF serves as a framework for interviews meant to assess hidden cognitive or social-emotional dimensions of individuals, especially business leaders. Clearly, CDF can equally be used for text or discourse analysis meant to help transform the thinking of groups.

This means a further development of CDF in three dimensions:

- from interviews to texts (discourse): We can use dialectical thought forms to analyze any spoken or written text.
- from individuals to groups: We can use CDF to assess not only individuals, but also groups and their thoughts, values and feelings.
- from assessment to transformation: We can use dialectical thought forms not only to assess, but also to transform, thinking.

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Contents

1. Introduction

The *Constructive Developmental Framework* by Otto Laske (CDF) assesses dialectical thinking as a main indicator of adult development. In this methodology, dialectical thinking is elicited in special, "cognitive", interviews and is measured in terms of patterns called *dialectical thought forms*.
Our objective in this article is to extend the CDF methodology by developing a methodology for dialectical text analysis. The result of this analysis is an assessment of the degree of articulation of dialectical thinking demonstrated in a text. As an illustration, in the contribution below the methodology is applied to two policy documents on Green Economy:

- European Commission (EC) (2011): Rio+20: towards the green economy and better governance.
- United Nations Environment Programme (UNEP) (2011): Towards a green economy. A synthesis for policy makers.

In this paper, we will present our ideas on dialectical text analysis with a focus on the analytical framework and methodology of dialectical text analysis. In a following document, we discuss key concepts of a Green Economy and make practical suggestions regarding the sustainability of economic development.

2. Two policy documents on Green Economy

EC (2011): Rio+20: Towards the Green Economy and Better Governance

The Communication of the European Commission sets out the initial views of the European Union (EU) on potential concrete outcomes for Rio+20. The suggestion is to use the Rio+20 summit to assess progress made since 1992, to take stock, address implementation gaps and emerging challenges. The EC communication tries to combine two different policy frameworks on Green Economy and on sustainable development. It recommends adopting four policy options: rallying broader support, adopt a green economy roadmap, provide a tool box, and define a mechanism for monitoring progress. In doing so, it mainly builds on the range of existing EU policies pertaining to sustainable development and the EU 2020 Strategy on inclusive, green and smart growth. The latter emphasizes the need for "smart" economies. It aims to coordinate the strategic responses from the EU and its member states.

UNEP (2011): Towards a Green Economy

The objective of the United Nations Environment Programme (UNEP) Green Economy Report is to use the opportunity of Rio+20 to scale up and embed "green shots" in central sectors of the economy. The report outlines a roadmap towards Rio+20 and defines what a successful outcome of Rio+20 would look like. The report argues for more intelligent management of natural and human capital, for a change of direction in shaping wealth creation in the world. The synthesis for policy makers is based on the working chapters of the Green Economy Report, which was prepared by a group of coordinating authors.

The UNEP report is an invitation to invest in smart public policies. It makes a value statement arguing that a sustainable future is only possible if the social and environmental pillar of the Green Economy is given "equal footing". It recommends

that wealth be measured in terms beyond a narrow notion of product outputs, and that social and environmental externalities are taken into account. The report strongly rejects the trade-off between economic progress and environmental sustainability.

3. The analytical framework

This chapter introduces the theoretical framework of dialectical text analysis. The framework is a synthesis of Laske's *Constructive Developmental Framework* (CDF) and Wilber's *All-Quadrants-All-Level-Model* (AQAL).

The four quadrants of dialectics

According to Laske, cognition in a broad sense comprises three human faculties:

- Meaning making is "social-emotional", having to do with the issue of "what should I do and for whom?"
- Sense Making is "cognitive" and deals with truth, having to do with "what can I know and what are the limits of my knowing?"
- Judgement is "epistemic" in the sense of reflective judgment, and has to do with "how far is the world that I am confronted with *uncertain*?" (Laske, 2010b, 5)

As validated research (Laske 2006) shows, human cognitive development occurs in steps (phases rather than stages), with each step building on the previous one, which again leads to higher-order thinking over four eras: common sense, understanding, reason, and practical wisdom.

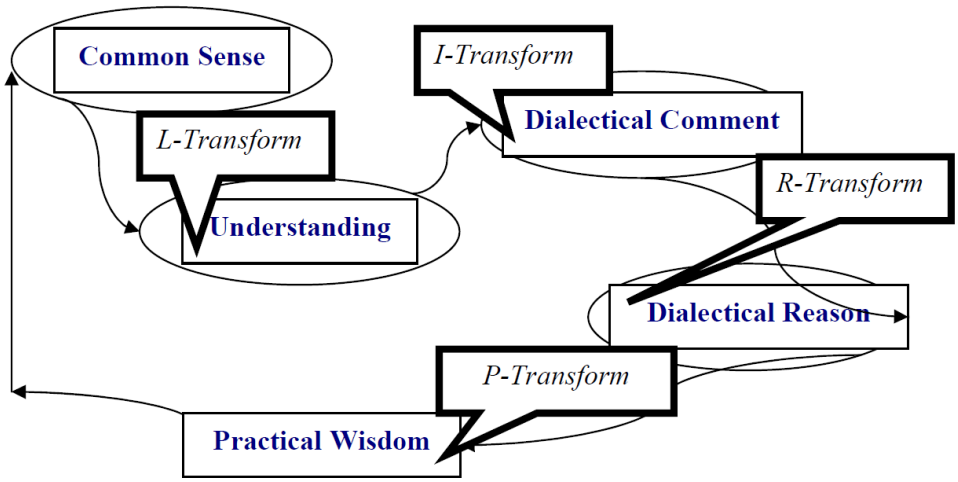

Figure 1: The four eras of human cognitive development (Laske, 2009, 129)

The first step is *Common Sense*, based on thinking that dismisses all contradictions as vacuous; anything that is not always identical with itself is neglected and is not considered as 'real' or 'true'. The second step, *Understanding*, is based on formal logic in which contradictions are acknowledged but cannot be dealt with other than as falsehoods. In this logic, A is always A and does not permit any "non-A" to be considered anything other than *false*.

In Laske's terminology, the tool used when moving away from Common Sense toward formal-logic-based Understanding is the "L-[Logic]Transform". It brings about the acknowledgement of contradictions as part of the reality, but not yet the ability of dealing with contradictions other than by discounting and ignoring them.
The second step of cognitive development, from *Understanding* to *Reason*, begins with the use of the I-Transform by which dialectical commentary – essentially critical thinking – is exercised. Such commentary invites comments by which to identify not only what is "there", but also what is "absent", assigning to both the same degree of reality (and thus asserting that what is "real" is pervaded by "absences"). This broader conception of the real world leads to an exploration of previously unknown dimensions of the base concept one is starting out with, by discovering what the concept covers up, implies, makes impossible to think about, etc. What emerges are ways of thinking that shed light on the deep implications of concepts, articulating their absences (negativity) and internal contradictions.
While the I-Transform leads to dialectical comments on somebody's or one's own understanding, the R-Transform takes dialectical comments further to achieve a remediation – full accounting – for what pre-dialectical thinking only incompletely does justice to in terms of truth. Applying dialectical comments to a base concept amounts to pulling together the 'illuminated' aspects of a concept to formulate a still more comprehensive concept. This is a process of re-mediating in the sense that the separated elements of a concept, when drawn together, make up a new composition that alters the meaning of the concept initially used (or situation it describes). Re-negotiating what is absent, what is not explicit or not articulated as part of a problem becomes a necessary ingredient in gaining a broader and deeper understanding of the base concept one started out with. Using the R-Transform is dialectical thinking proper, and belongs to phase 3 of cognitive development.
Finally, the fourth transform is found in a person's thinking wherever a full integration of logical and dialectical thinking is achieved. We then speak of *Practical Wisdom*, since such thinking is no longer abstract but is practice-oriented and effortlessly applies dialectical thinking to actions in the world. What is acted upon is practical knowledge, and no contrast is forthwith experienced between logical and dialectical thinking.

In the context of the four eras of cognitive development just described, Laske proposes to measure progress in dialectical thinking by distinguishing, with Basseches (1984), four categories of thought forms that simultaneously indicate four ontological dimensions of the world itself. Laske calls these four dimensions the *Four Quadrants of Dialectic*. Epistemologically, they constitute the *Dialectical Thought Form Framework* (DTF) within CDF.

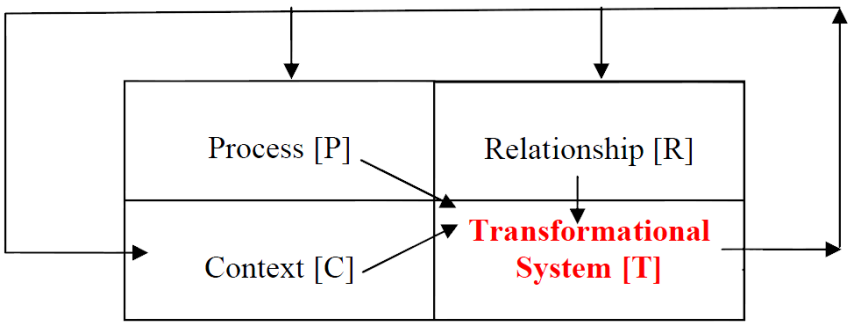

Figure 2: The four quadrants of dialectic (Laske, 2009, 172)

To keep up with ever changing reality, dialectics "thinks" of the world as an organized whole in a state of constant transformation. To articulate this transformation, humans use dialectical thought forms, attempting to come close, or closer, to changes in the world itself.

A *thought form* is a high-level abstraction that can act as a tool for unfolding complex thoughts in terms of the concepts they articulate or imply. The core dialectic of human thinking constantly leads beyond the initial concepts used in describing an event or a situation. When keeping out presuppositions about a subject matter, these initial concepts show themselves to be just a beginning in grasping the contents they refer to. Thus, dialectical thinking follows the notion (Laske, 2010b, 15) that "A is never only A but always already non-A, and therefore always tends toward synthesis in A prime" (Laske, 2010a, 16).

According to Laske's conception of dialectics, it is helpful to distinguish four different categories of dialectical thought forms each of which contains 7 individual thought forms and thus together make up a total of 28 thought forms (Laske, 2009, 224):

1. Process [P] – *unceasing change* in how things emerge into being and vanish into non-being.
2. Context [C] – *stable configurations* that appear as a stratified "big picture" momentarily able to withstand unceasing change.
3. Relationship [R] – *unity in diversity* that shows how what is different is different only relative to a shared commonality that includes all differences; this class of thought forms enables looking for the larger unifying system formed by different, seemingly unrelated, elements, however split off or peripheral they may seem to be relative to the centre, and puts into focus the differences we observe to exist as elements grounded in an organized whole (holon).
4. Transformation [T] – *equilibrium* created in thought and action by integrating different, even opposing, systems, as a hallmark of human agency (Laske, 2009, 224)

The four quadrants of integral theory

Wilber's AQAL-Model represents the abstract core of integral theory thinking. According to Wilber, it is a theory that can be applied to any subject matter (which makes it an abstraction in the sense of formal logic, and testifies to its non-dialectical nature).
The four quadrants in Wilber's integral theory are the following:

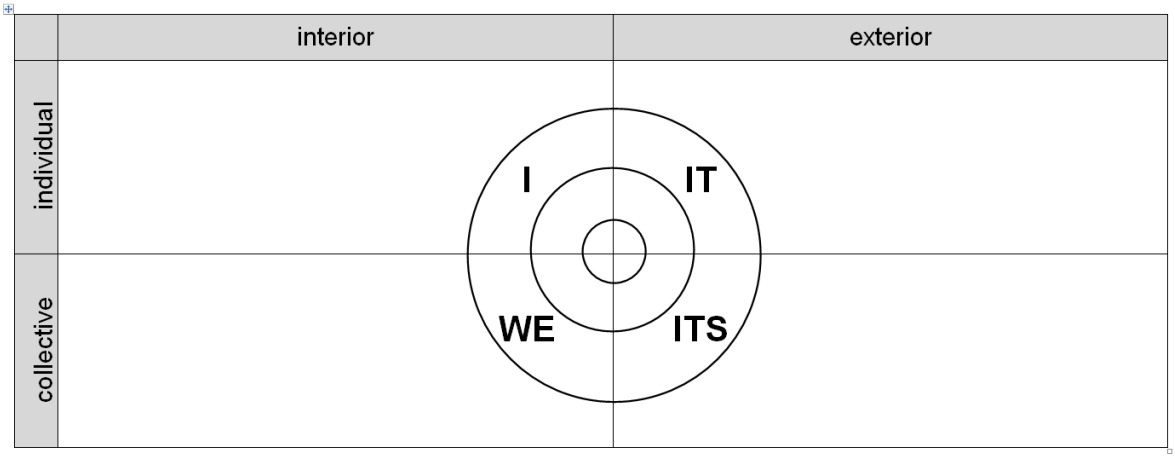

Figure 3: The quadrants of Integral Theory (Wilber, 2005, 30)

The Figure above shows the I (the inside of the individual), the IT (the outside of the individual), the WE (the inside of the collective), and the ITS (the outside of the collective) dimensions of the quadrants. The quadrants represent four fundamental perspectives one can take on any occasion, or four basic ways of looking at elements of reality. They are the inside and the outside of the individual and the collective (Wilber 2005, 30).

The four Wilber quadrants can be applied, for example, to the issue of sustainability with respect to the human and the physical environment (UL = upper left, UR = upper right, LL = lower left, LR = lower right):

	interior	exterior
individual	**Experience** "Why I do what I do" Areas studied "I", subjective realities, i.e. self and consciousness, invisible states of mind, psychological development, mental models, emotions, will UL	**Behaviour** "What I do" Areas studied "It", objective realities, i.e. brain and organism, visible biological features, degrees of activation of the various bodily systems UR
collective	LL **Culture** "Why we do what we do" Areas studies "We", intersubjective realities, i.e. culture and worldview, invisible webs of culture, communication, relationships, norms, boundaries, customs	LR **Systems** "What we do" Areas studied "Its", interobjective realities, i.e. social systems and environment, visible societal structures, economic systems, political orders, natural resource management

Figure 4: The four quadrants of the integral framework with respect to humans and the physical environment (Brown, 2005a, 11)

Relation between the four quadrants of dialectics and integral theory

In Laske's thinking, the four quadrants of dialectics are not only ways of looking at the world (epistemology), but also make up the reality of the world of which we are a part (ontology). As a result he asserts that the four quadrants of dialectic ground and inhere not only the world, but also each of the integral quadrants by which the world is seen epistemologically.

That is to say that each of the four integral perspectives can be unfolded dialectically using all four thought form classes – Process, Context, Relationship, Transformational System (Laske, 2010b, 24). This amounts to instilling dialectic into the formal logic schemas Wilber calls "quadrants". According to Laske, thinking in terms of Wilber's quadrants by definition requires dialectical thinking (although this is not often realized by their users); that is, attention to the structure, not simply the content, of thinking. To be able to do so presupposes education in dialectical thinking (Laske, 2010a, 9).

Dialectical text analysis

In Laske's CDF, the cognitive capability of a person is assessed by interview and, based on the interview, by an analysis of thought forms that occur in the transcript of the interview. There are some commonalities and differences between cognitive interview and dialectical text analysis. In a cognitive interview the topic is the *inner workplace* of the interviewee, whereas dialectical text analysis can cover manifold topics such as, e.g., sustainability, or Green Economy. The four quadrants of integral theory are applicable to any subject and therefore also to the workplace.
In CDF, a distinction is made between three "Houses" or mental domains of professional functioning: Task House, Organizational House, and Self House. The self house corresponds to the UL, the task house to the UR and the organizational house to LL and LR combined (which makes it as complex as it is). As seen above, the different aspects of sustainability can be mapped to the four integral quadrants. The quadrants of integral theory are useful in highlighting different aspects of any topic and can serve as a common denominator for text analysis.

In CDF practice, the interviewer introduces three main topics, e.g., the different Houses – to engage the interviewee in describing their internal [in contrast to the external] workplace. S(he) probes the interviewee so as to elicit the best thinking that is available. This special technique cannot be applied in text analysis. There is no possibility for probing and clarification. Text analysis starts with the written result of a thinking process. Therefore as a heuristic, in our text analysis we categorized only single dialectical thought forms with single weights of 1 (rather than of 2 or 3, as in CDF). Locating, identifying, and interpreting individual thought forms is itself a dialectical process since it is more than logical classification; rather it is a "re-thinking" of a text or transcript in terms of one's own capacity for dialectical thinking.

Normally, a cognitive interview lasts about one hour and the number of thought forms in different interviews can be easily compared. In text analysis, there is no restriction in text length. Some of the key indices, as for example the CDF *fluidity index* and the weighted number of individual thought forms, depend directly on the length of a document. Therefore, some of the CDF indices can only be applied in comparing documents of the same length. Other indices, such as the *cognitive score*, the *system thinking index* and the *discrepancy score*, are applicable to texts of any length, as we will show below.

4. Comparative analysis of dialectical thought forms in two policy documents

This section presents the result of a comparative analysis of dialectical thought forms of two policy documents (EC 2011 and UNEP 2011). To adjust the text length, in UNEP 2011 only the chapter "Enabling Conditions" was analysed. Both documents deal with the topic of Green Economy. Issues discussed are predominantly located in the lower right quadrant (systems; what we do). The only topic belonging to the lower left quadrant is that of education and training, mentioned only briefly. Other topics that concern inter-subjective realities, i.e. culture, world view, communication, relationships, norms or customs, were not found in the two texts analyzed.

Concept Behaviour Graphs

It is useful to visualize the flow of concepts through an interview. The *Concept Behaviour Graph* (CBG) does just that, visualising the movements-in-thought expressed by an individual during a one-hour interview. The CBG is also a useful tool for representing the flow of thought forms in a particular text.

EC 2011					UNEP 2011			
P	**C**	**R**	**T**	**Bit**	**P**	**C**	**R**	**T**
	8			#01		12		
	9			#02		13		
4				#03		14		
			22	#04	7			
			25	#05	5			
5				#06	5			
	9			#07	5			
	9			#08	5			
		15		#09			20	
2				#10			19	
	8			#11			20	
	10			#12			15	
	12			#13			18	
	14			#14		12		
	8			#15				26
		21		#16				26
	10			#17	5			
	10			#18	5			
	11			#19				25
	8			#20				28
	10			#21				27
	14			#22				24
	14			#23				
			26	#24				
			25	#25				
	10			#26				
	10			#27				
	12			#28				
3				#29				
6				#30				

		20		#31				
	11			#32				
4				#33				
5				#34				
	11			#35				
7	**21**	**3**	**4**	**Total**	**7**	**4**	**5**	**6**

Figure 5: Comparison of concept behaviour graphs. The numbers refer to thought forms ranging from 1 to 28.

The *Concept Behaviour Graphs* above show quite different thinking movements in the two documents analysed. In the EC paper, context thought forms are used predominantly and build the backbone of the text. In the UNEP document, there is a rather systematic motion from context to process to relationship thought forms, which lead towards the use of transformational thought forms. In the second text, all thought form classes occur and none of them predominates.

Indices of dialectical thinking

What follows is a closer look at the different indices used to measure the level of dialectical thinking in the two different documents.

EC 2011		**UNEP 2011**
(7+21+3+4) = 35	Total	(7+4+5+6) = 22
(7+17+3+4) = 31	Total Fluidity	(4+4+5+6) = 19
(31 out of 84) = 37%	Fluidity Index	(19 out of 84) = 23%
35/6900 = 0.5 %	Frequency Index	22/5530 = 0.4 %
17 out of 28 = 60%	Diversity Index	14 out of 28 = 50%
[22, 55, 10; 13 (%)]	Cognitive Score	[21, 21, 26; 32 (%)]
13%	System Thinking Index	32%
10:21	Discrepancy Index	9:10

Figure 6: Comparison of important indices of dialectical thinking

Fluidity Index. In CDF, the fluidity index specifies the overall degree of articulation of dialectical thought forms used during a one-hour cognitive interview. The index is computed based on the frequency and the weight of explicit articulations with which thought forms in all four classes are used (Laske, 2009, 630). The highest weight index an individual thought form use can achieve is 3 (meaning "clearly articulated"), a weak articulation being scored as 1. Fluidity is defined as frequency and sophistication of thought form use in a person's thinking.
The comparison of the two documents shows that the EC document has a higher fluidity index than the UNEP document (EC: 37% versus UNEP: 23%). However, a closer look at the data suggests that this higher quantity of thought forms is due to a longer text analysed. This confirms that the standard fluidity index does not truly apply when comparing texts of different size and word totals.

Frequency Index. The frequency index is not part of CDF but stems from conventional text analyses. It could serve as an alternative to the fluidity index in dialectical text analysis given that fluidity is a measure relying on probing during an interview. The index is computed on the frequency of thought forms in relation to the number of words and text length. The comparison of the two documents shows an approximately similar frequency index (EC: 0.5% versus UNEP: 0.4%). This means that the frequency of dialectical thought forms in the two documents is more or less the same. The frequency index could be used to compare documents of different text size.

Diversity Index. The diversity index is also not part of CDF. It could be used as an additional index to the previous one. The index is computed on the number of different thought forms in relation to the total number of 28 possible individual thought forms. The comparison results in the EC document having a slightly higher diversity index than the UNEP document (EC: 60% versus UNEP: 50%). The diversity index is a simple measure that expresses the variety of individual thought forms but does not differentiate between the different classes of thought forms. Yet, this index is sensitive to text size. The longer a text, the higher its diversity score tends to be.

Cognitive Score. The cognitive score "[P, C, R; T (%)]" is the most specific of all cognitive measures in CDF. It specifies the percentage of thought forms used in each of the four classes of dialectical thought forms over an entire interview. The score reflects the strength with which a particular thought form class is used by a person and, based on that, indicates the balance [relative strength], or lack of balance, between thought form classes in a person's present thinking (Laske, 2009, 624). The score contains the systems thinking index discussed below.
The two documents compared demonstrate a rather big difference in this score (EC: [22, 55, 10; 13 (%)] versus UNEP: [21, 21, 26; 32 (%)]). While context thought forms dominate in the EC document [55%], the UNEP document shows a quite balanced use of the four classes. For this reason, the cognitive score can be used in comparing the use and frequency of different thought form categories in texts of different size. Where the texts differ in length, only the relative, not the absolute, strength of different classes used is shown. In the present case, the score indicates that the UNEP text documents "better thinking" in the sense that the world view expressed in the document is more rounded, more sophisticated and differentiated at the same time, and in that sense "more dialectical".

System Thinking Index (STI). In CDF, the systems thinking index (STI) indicates the degree to which an individual can coordinate thought forms from different classes that represent the quadrants of dialectics (Laske, 2009, 624). It represents the cognitive centre of gravity of an individual, defined by the strength of relationship between thought forms of different classes, and the degree to which their intrinsic connections are seen.
The comparison of the two documents shows that there is a considerable difference in the systems thinking index (EC: 13% versus UNEP: 32%). The score indicates that the UNEP text uses relatively more thought forms of the transformation class than the EC documents, and also that the writers of the UNEP text are "better thinkers" in the sense that they are able to coordinate thought forms with each other.

Discrepancy Index. In CDF, the discrepancy index makes explicit the proportion of critical to constructive thinking in an individual. It is computed by comparing the sum of "critical" – Process and Relationship – thought forms with the sum of "constructive" thought forms, -- of Context and Transformation (Laske, 2009, 628).

The comparison of the two documents shows that there is a considerable difference in the discrepancy index (EC: 10:21 versus UNEP: 9:10). The index indicates that in the EC document the constructive thought forms predominate, whereas in the UNEP document critical and constructive thought forms are well balanced. Such balance is thought to reflect higher-developed thinking in which thought forms form an equilibrium. It is interesting to note that, in political terms, the predominance of context thought forms – i.e., of stable configurations assumed – in the EC document reflects a much more conservative stance compared with the UNEP document.

A text is the result of a collective process. Different versions are the concrete expression of different (political or other) narratives. As shown in these examples, dialectical text analysis can provide a detailed look at the level of dialectical thinking manifest in a text. It can be used to compare texts of different authors, but also different versions of the same text during an ongoing editing process. In conclusion, dialectical text analysis can be considered as a useful tool for assessing the phase of cognitive development a particular group is presently in, which may reflect the phase of development of the organization the group is part of (Laske, 2009, 120).

5. Key concepts in the discourse on Green Economy

In the following, we will be using quotes and comments on key concepts of sustainability identified in the text analysis of the first part of this article. The phrases used by the authors to elaborate the key concepts chosen of "green economy" and "governance" will be assessed in terms of the thought forms used and the corresponding illuminative and transformative power of the authors' thinking. As shown in the first part of this article, human cognitive development occurs in qualitatively differentiated phases that build on each other, stepping from common sense to understanding to reason, and to practical wisdom.

A premise for using the transformative power of dialectical thought forms in conceptual thinking is to account for what is currently absent or has not yet emerged. Applying dialectical comments to a key concept means 'illuminating" it by identifying hidden aspects that relate separated elements and by creating new compositions of a concept. This leads to a broader and deeper understanding of the key concept. It shows . how the authors model reality. Eventually, this improves our capability to act upon the new insights and knowledge that is generated.

Green Economy

"In a green economy many challenges can be transformed into economic opportunities, not only reversing negative environmental trends, but also driving future growth and jobs. For instance, experience shows that market-based approaches such as emissions trading are not only cost effective tools to address environmental problems but are also a source for investment."
[EC 2011: p5, #07]

"The green economy offers opportunities to all countries, irrespective of their level of development and the structure of their economies. While in many cases investments to move towards a green economy can result in short-term win-win solutions, in other cases a medium term perspective will be needed, and transitional costs will

have to be addressed, including through "pro-poor" policies. Even though there is no "one-size-fits-all" model, there are common challenges and solutions, and countries will benefit from exchanging experience and improved international cooperation."
[EC 2011: p5, #08]

Comment: This paragraph describes an equilibrium of a whole or emphasis on a whole (context thought form 09). The focus is on an organized whole (green economy) held in balance by its parts. The paragraph emphasizes the equilibrium of opposing forces as defining elements of a whole (win-win: address environmental problems and source for investment). The text introduces a series of different concepts that are listed as different parts of the system like economic opportunities for all, short term win-win situations, pro-poor policies, market-based instruments, transitional costs, etc. which form part and are used to describe the concept of a green economy. The paragraph describes a whole and its parts and does this in a rather static and accumulative way emphasising the prospect of a smooth and controlled or balanced change of the systems without any reference to risk of collapse or major disturbances.

"Regulatory instruments will play an important role in greening the economy both nationally and internationally. Regulatory instruments should be combined with market-based instruments (such as taxes, tradable permits and environmental subsidies) which are flexible and cost-effective tools that can help achieve combined economic, social and environmental objectives. Fiscal reforms that shift tax burdens from labour to environmental impacts and energy can create win-win outcomes for employment and the environment. Cap and trade systems, such as the EU Emissions Trading Scheme, have proven to be effective markets instruments. Other effective schemes include fiscal incentives for SMEs, water charges, ecotaxes, and feed-in tariffs. Payments for ecosystem services are already being applied in some countries and reflected in ongoing negotiations on Reducing Emissions from Deforestation and Forest Degradation (REDD)."
[EC 2011: p8; #18]

Comment: This paragraph describes the whole green economic system in structural and functional terms (context thought form 10) and provides details of its formal mechanisms (regulatory instruments, market based instruments, fiscal reforms, cap and trade systems, fiscal incentives for SMEs, payments for ecosystem services). The text explains the different schemes that are already in place. These schemes are combined and structure the whole, i.e. regulatory schemes and market-based instruments as part of the green economy. It provides further understanding of the complexity of the schemes and their functions. It draws attention to the fiscal reforms and other incentive schemes and models the complexity as possible win-win situations (EU ETS and REDD). The text refers to different schemes as part of the strata and layers of the whole. While describing the system and its structures and functions, the text could but fails to introduce the notion of process or evolution of the system nor does it describe the relationship between different functions and structure. The text introduces sequencing of steps culminating in a higher form of social system. Overall, the text describes the systems in a stable and static way.

"Ensuring and measuring progress requires comparable metrics and indicators to be in place. A number of organisations, such as the OECD, have been working to provide various forms of indicators that can reflect the state of the environment and

natural assets, well-being and the quality of life. These indicators should be used alongside Gross Domestic Product (GDP). However, only some of these indicators have so far been used widely in communicating policy needs, such as CO2 intensity and the Human Development Index. Agenda 21 already requested governments to develop sustainable development indicators and environmental accounting. However, progress has been slow and uneven. Rio+20 should promote the transparency of national reporting and agree on the use of environmental accounting and robust indicators at national and at global level in order to measure this wider sense of progress in addition to GDP."
[EC 2011: p9, #23]

Comment: This paragraph speaks about the awareness of a multiplicity of contexts that define a situation (cf. different but comparable metrics) (context thought form 14). Different lines of interpretation for one and the same phenomenon are used (measuring progress) and new and comparative indicators (parameters) are referenced for different situations (environmental, well-being, quality of life) in addition to GDP, C02 intensity and the Human Development Index. New and different actors are introduced, OECD and UNCED (Agenda 21) which focus on different situations (environmental, well-being). The text emphasis different dimensions of progress and describes different events (Agenda 21, Rio+20) and their results (slow progress, communications) within a goal of achieving a single system that is transparent, and has clear accountabilities and that can be applied at national and global level. The dialectical thinking form is one of embedding the different parts in a constructive context.

"Subsidies that have public-good characteristics or positive externalities can be a powerful enabler for a transition to a green economy. Green subsidies, such as price support measures, tax incentives, direct grants and loan support, may be used for a number of reasons: (a) to act quickly in order to avoid locking in unsustainable assets and systems, or of losing valuable natural capital that people depend on for their livelihoods; (b) to ensure the realization of green infrastructure and technologies, especially those with substantial nonfinancial benefits or financial benefits that are difficult for private actors to capture; and (c) to foster green infant industries, as part of a strategy to build comparative advantage and drive long-term employment and growth."
[UNEP 2011: p28, #05]

Comment: This paragraph emphasizes the interaction of ideas as a motor of knowledge creation and describes the practical active character of knowledge (process thought form 05). The text assumes that knowledge and experience is already there and just needs to be applied. It describes the advantages of initiating or supporting a variety of different processes and practices (tax incentives, targeted subsidies, grants, loans, etc). It advocates changes in the rules of the system and incentives. It encourages change in the infrastructure and emphasis the need to economic growth and social objectives (jobs, industries). Dialectical thinking is expressed through the introduction of a dynamic notion of movement in events, to capture an opportunity and to act quickly, or to foster and avoid something, knowing that things are in a flux and on the move. The emphasis is on putting knowledge into practice and applying concrete policy measures.

"Subsidy reform is possible if done with careful attention to the poorest communities. Removing subsidies is challenging given the vested interests in their maintenance, but there are numerous examples of countries that have undertaken reform processes […]. Subsidies are sometimes justified with the argument that they benefit low-income households, but unless the aid is targeted, the majority of the spending often flows to higher-income households. That said, subsidy reform will often lead to increases in the prices of subsidized goods. Although low-income groups typically benefit from only a small share of subsidies, they spend a larger proportion of their income on basic goods, including food, water and energy, and can be disproportionately affected if subsidies for these goods are removed. Given this, a gradual reform strategy with short-term support measures is required. Such a reform strategy could include, among other things, the use of targeted consumption subsidies to poor households or the redirection of funds into high-priority areas for public spending, such as health care or education."
[UNEP 2011: p30, #11]

Comment: This paragraph describes patterns in the way different related parties are acting upon each other (relationship thought form 20). It reflects on the reciprocal influence of one thing (subsidy reform) on another (low income households) and expresses concern about the effect of subsidy removal on low-income households and the poorest communities. It looks at the vested interests of different stakeholders in maintaining the status quo. The suggestion is to introduce new schemes gradually. Such slow or step-by-step transition takes account of shifting patterns of interaction over a certain period of time. Attention is given to the needs of different societal groups and their dependency on basic goods, the prices and affordability of such goods and the kind of intervention area (health, education, food, water). Dialectical thinking is shown in the description of the relationship between low-income households and the way they are affected by intervention in specific policy areas (spending priorities, cuts or removal of subsidies), with an emphasis on the patterns of interaction between income and purchasing power and its influence on needs.

Governance

"Sustainable patterns of supply and demand at international level can be supported by enhancing mutual supportiveness between trade and sustainable development. This includes maintaining an open and non-discriminatory multilateral trading system, and ensuring that no country should be prevented from taking measures to promote sustainable development, provided that such measures do not constitute arbitrary or unjustifiable discrimination, or a disguised restriction on international trade. Mutual supportiveness can also be promoted by reducing or eliminating tariff and non-tariff barriers for environmental goods, technologies and services, as well as environmentally-friendly or fair trade products. In addition, as sustainability assurance schemes and corporate social responsibility practices expand, the development of international guidelines and standards, certification schemes and labels, can provide economic, environmental and social benefits. International measures to combat illegal trade in environmentally sensitive goods (such as wildlife, hazardous substances and natural resources) need to be strengthened – a good example of what can be done are the Voluntary Partnership Agreements that the EU is negotiating in the context of its initiative on Forest Law Enforcement Governance and Trade (FLEGT). The inclusion of sustainability provisions as part of multilateral and bilateral trade agreements also need to be promoted."
[EC 2011: p9, #23]

Comment: This paragraph outlines a number of multiple contexts relevant for international governance (context thought form 14) such as sustainable development, trade, corporate social responsibility, combating of illegal trade, voluntary agreements, etc. The description is in general terms, referring to phenomena and instruments (FLEGT, trade in wildlife and hazardous substances) that define different events and situations. The text refers to different interpretations of the reasons for trade restrictions (discrimination, protectionism or the promotion of sustainable development schemes), which can give rise to positive or negative condequences. For example, the speaker is aware of the different debates supporting the expansion of *voluntary* standards which can provide environmental, economic and social benefits, and also that supporting international *binding* rules are needed to prevent and restrict trade in sensitive environmental goods but does not elaborate how voluntary and binding guidelines might relate to each other. The tensions between non-discriminatory open trade and trade restrictions to promote sustainable development and its different points of views are recognised and acknowledged. Dialectical thinking lists a multiplicity of contextual aspects, but without transformational power.

"Compared to global economic structures international environmental governance is weak. This is due to institutional fragmentation, a lack of accountability for implementing agreed policies, the lack of a strong and authoritative voice within the global governance system, as well as a lack of human and financial resources. In addition, the new roles and responsibilities of emerging economies are not sufficiently defined. Over the past decade, attempts to improve international environmental governance have been made – most recently as part of high-level consultative group under the aegis of UNEP (Nairobi-Helsinki process) – but making tangible progress has so far proved difficult."
[EC 2011: p10, #25]

Comment: This paragraph compares two systems in order to make an evaluative comparison of global economic structures and international environmental governance (transformation thought form 25). It evaluates systems in terms of their inclusiveness, differentiation, degree of integration, power and accountability. Attempts to improve the weakness of environmental governance are described with reference to the rule of law of the global economy with well served human and financial resources. The fragmentation of global governance is identified as a reason why a potential transformation of environmental regulatory systems is not realised. Increased coordination and accountability for agreed policies is presented as a master form. Improving international environmental governance (UNEP Nairobi-Helsinki process) is presented as a possible new configuration though this has practically not yet been attained. Dialectical thinking is demonstrated in a movement of thesis – antithesis though the synthesis (what might transform international environmental governance) is only hinted at in the comparison between the two systems, and then in rather general and weak terms referring to weak human political agency.

"Command and control measures may offer the lowest-cost solution in some cases. While market-based instruments have a well-deserved reputation for efficiency, in some situations command and control measures may offer the lowest-cost solution. For example, there may be no market instrument that can efficiently ensure the

elimination of bottom-trawling in fisheries, and the cost-effectiveness of regulation may be preferable where there are opportunities to regulate an industry upstream – such as oil extraction and refining – that can have knock-on effects throughout the supply chain. Depending on the situation, command and control measures can be administratively easier to implement and may pose fewer political challenges. In the short term, for example, it may be easier to establish new energy-efficiency standards and remove obstacles in the planning-permission process of renewable energy projects than to establish a carbon market and eliminate fossil-fuel subsidies."
[UNEP 2012: p28, #02]

Comment: This paragraph uses frames of reference and ideologies (context thought form 13) to make a case for a particular kind of governance. The paragraph describes instruments that are falling within an established paradigm of state intervention and regulatory control. The text evaluates an idea or thought in terms of a larger context of the role of the state command control vs. marked based instruments. The text argues that the use of market based instruments have its rationale and merits for efficiency but also its limits. The text continues to build a case in favour of effectiveness of governance defined as enforcement and elimination using positive feedback (self-reinforcing collapse or explosion of system i.e. overfishing). It introduces the economic concept of the cost-effectiveness of regulation into governance reasoning. It proposes regulation as a means to introduce a corrective (i.e. negative) feedback for industry upstream – arguing that this action has the highest or best leverage point for governance regulation in comparison to an economic market based instrument. The text advocates the use of governmental regulatory power as a political act of freedom to reorganise an industry and its supply chain.

"International environmental agreements can facilitate and stimulate a transition to a green economy. For instance, multilateral environmental agreements (MEAs), which establish the legal and institutional frameworks for addressing global environmental challenges, can play a significant role promoting green economic activity. The Montreal Protocol on the Substances that Deplete the Ozone Layer, which is widely considered to be one of the most successful MEAs, is a case in point. The Protocol led to the development of an entire industry focused on the replacement and phase out of ozone-depleting substances. Of course, the MEA with the most potential to influence the transition to a green economy is the United Nations Framework Convention on Climate Change (UNFCCC). The UNFCCC's Kyoto Protocol has already stimulated growth in a number of economic sectors, such as renewable energy generation and energy efficient technologies, in order to address greenhouse gas emissions. At a global level, the renewal of a post-Kyoto framework for carbon will be the single most significant factor in determining the speed and scale of the transition to a green economy."
[UNEP 2011: p33, #19]

Comment: This paragraph uses evaluative comparison of systems in transformation (transformation thought form 25) to describe governance options. It evaluates systems in terms of their conformity with an ideal type (multilateral environmental agreements MEAs) and in terms of their potential to contribute to developmental transformation in another system (transition to green economy). It compares the results of an existing MEA on Ozone Layer with the UNFCCC Kyoto Protocol and its significance for transition to green economy. It describes the resulting

transformation of a specific energy sector (renewable energy, energy efficient technology), looking at effectiveness, usefulness to stimulate transition, speed and adaptability. The author builds on the success of one economic sector to illustrate and argue or invite for a transition of the next sector. The focus is on government agency that can increase the chances of transition to a green economy, accelerating and scaling up transformation. The text describes the collapse of the old system (one that used ozone depleting substances) and the shift to a new system. It applies the notion of the economy as a living system which is constantly changing and can transform itself.

Comparison of the two documents

The Cognitive Score of the Commission text was [22, 55, 10; 13 (%)] with a System Thinking Index of 13%. The thinking of the Commission text tends to revolve around the given, complex and rather static context of European policy making that is foremost driven by institutions that regulate and introduce new instruments and incentives. The text remains close to the EU's own inherent way of bureaucratic decision making. The text hardly engages in comparing different systems and does not apply critical thinking and dialectical inquiries as an invitation to the reader to think beyond the current context. The result is that the text disguises and flattens potential developmental conflicts rather than provokes any change. The authors suggests a carefully controlled slow change of direction towards a green economy. They avoid identifying any risks that might destabilise economic, political or social systems. Basically, the text promotes a modified 'business as usual' approach and ignores any potential structural reorganisation of a new (green) economy.

The Cognitive Score of the UNEP text was [21, 21, 26; 32 (%)] with a System Thinking Index of 32%. The UNEP text uses comparison of systems to identify specific options for action by governments using mainly regulatory power. The text addresses conflicts between interest groups in favour or against proposed change. The authors advocate action through political governance, i.e. the use of regulatory power rather than to rely on market based instruments only. A Green economy is foremost described in terms of changing the means of production, the acceleration of technological change and the creation of efficiencies as a response to environmental challenges. The limitations of a focus on productivity are not explored in the text .

6. Absences in the discourse on Green Economy

In dialectical thinking and text analysis absences or what is missing also have to be considered. In this chapter we refer to some aspects that are not discussed in the two policy documents on Green Economy.

The left side taboo

As already mentioned in the first part of this paper, the issues of Green Economy are predominantly located in the lower right quadrant of the integral model. This quadrant describes aspects of a topic as an observable system.

Both documents discuss how economic, social and ecological systems work and should be changed. The left side quadrants describe the interior aspects of a topic

such as individual experiences or collective cultures. The only topic in the two texts belonging to the lower left quadrant is that of education and training, mentioned briefly. Other topics that concern inter-subjective realities, i.e. world views, value systems or aspects of social justice and equity were not found in either of the two documents. In contrast to the ecological and the economic aspects of sustainability, the social sustainability is not well elaborated. It is quite nebulous how a Green Economy could eradicate hunger in poor countries without a change in the mind-sets of citizens in industrialized and emerging countries. In an integrated view of a Green Economy the left side quadrants would not be neglected. Since both documents omit topics belonging to the left side quadrants we call this feature of the two policy documents the "left side taboo".

Leverage points for Green Economy

To help us with the key concepts in as far as they relate to systems functioning and theories, we refer to an article on interventions in systems by Meadows (1999), which identifies different strong or feeble leverage points in a system. For example, parameters are among the most feeble leverage points for system change and can consist of constants such as subsidies, taxes and standards; or also buffers and stocks that can stabilise flows and the functioning of the system. Structural changes in a system have more potential to transform a system and where national and global economies are concerned include such structures as the transport network, demography and population age, timing of information flows, and corrective measures, for example the positive or negative feedback loops that may correct or reinforce existing trends and effects. Another category of leverage points exist in the power to add, change, evolve or self-organise a system's structure. Government policy can redirect incentives, punish, introduce or reduce constraints. Intervening in a system at the level of goals is very powerful. But the most powerful lever is when the current mind-sets of a system are transcended, i.e. a new paradigm is formed, driven by a rethink of the design purpose and intention of the system including all previous leverage points like goals, structure, rules, delays and parameters. A paradigm shift is like a trigger, threshold or tipping point that can bring about the collapse and shift of a system with minimal intervention.

Comparing the two policy documents with Meadow's (1999) list of leverage and intervention points in systems, we find that the two documents talk predominantly about parameters, structures and rules, and only rarely refer to goals and paradigm shifts. The text analysis shows us that the discourse on Green Economy remains overall in the same paradigm as that on the conventional economy. The paradigm is focused on economic growth. A priori, environmental and social goals are only part of the systems thinking if they comply with the primacy of economic (green) growth. A more transformational way of thinking would be to see that earnest political strategies for sustainability must involve precarious balancing of different social, economic and environmental goals. Conflict between different goals has developmental potential that can lead to higher levels of social and individual functioning, allowing integration of multiple perspectives.

Talking about power

Both texts are rather silent on the concept of power relations and human agency. The texts might have given more consideration to questions such as:- 'who dominates and governs whom?"What role is given to increased public expression by

individual and global citizens in the virtual web space?' 'What is the view of the political act as an expression of potential freedom?' 'What are the key concepts and ingredients of governance?' 'How is the risk of violence of political dominance perceived?' 'Which authorities are introduced and presented in a function with the power to act?' 'Which other actors or undercurrent societal forces are identified?' 'What is the role of individual citizens or social movements who are not part of the formal decision-making system? '

7. Better thinking for sustainability

Language, i.e. text, is the medium by which we all, including our political leadership, communicate how we view and experience reality. What sometimes appears as linguistic opacity or a confusing concept may mask basic conviction and imply hidden assumptions. The way we use concepts can open or narrow ways of looking at reality. It can invite or prevent critical questioning. It can neglect or acknowledge different actors. It can distinguish between trends and between forces that shape reality like separating waves from undercurrents in the ocean. For example, unless our minds can think and imagine that "less can be more", citizens in affluent societies will hardly be willing or able to perceive the scarcities in global resources or acknowledge the planetary boundaries as part of our global reality.

Thinking without presuppositions

If we accept that different views and thinking is not wrong but is part of the way our societies construct and legitimise their reality then we can slowly start to engage in dialogue. Dialectical thinking in politics has the potential to build broader common ground and to start at the premises of mutual recognition of the "Other". In that act, different concepts can be challenged, compared, contested, added upon, replaced, relocated and transformed.

In transformative dialectical thinking, there is no discarding, nothing is ever wrong. What is currently marginal (views of individuals, excluded social and economic groups, people's power) can be invited to the negotiation table. Our different and contradicting views on reality and the concepts we use can refer to each other as its "Other". For this, the effort of the concept (described by Hegel as thinking without presuppositions) is needed, which means the willingness to invest, to listen, to inquire, and to change one's own position.

Stakeholder dialogue and transformation

Dialectical thinking helps to improve thinking processes in individuals and groups. The quality of a decision is a result of dialectical thinking, i.e. of an illumination of different aspects of a complex topic. Transformational thought forms coordinate illuminating thought forms and lead to more balanced solutions (Laske, 2009, 315 ff).

Policy documents can be seen as a result of an ongoing conversation, a process in dialogue. Dialectic thinking in dialogue involves the interaction of relevant stakeholders in a rich illumination and remediating processes. For global governance, excluded citizens and poor countries need to be respected as stakeholders in their own right and as equal partners on Green Economy.

Talking to each other is a prerequisite for expressing our experience of reality. Our language, our thinking and the concepts we use reveal how we see ourselves and the Other in this world. It is only through language including art and through action that we can express our agency, our humanity and uniqueness as individuals and as people. And subsequently, become citizens that take part actively in public political debates and in shaping our future.

Dialectical thinking in politics

Often, today's politics are perceived as a response to external constraints and pressing urgencies in ensuring the survival of the system (financial crisis, debt crisis, economic crisis, climate change, etc.). According to Hannah Arendt, the meaning of politics is to create freedom, to initiate a new process and to engage in transformative political actions (Arendt 2006: 79: "Der Sinn der Politik ist Freiheit").

Dialectical thinking in politics implies rethinking the key concepts that govern the structure of our markets. Introducing new rules, incentives, market based or regulatory instruments falls short of dealing with the developmental conflicts inherent and intrinsic to the emergence of a green economy.

Dialectical thinking about governance and (green) economics needs to confront rather than to shy away from ethical debates on values and goals of our economic system. What is needed is to look at all the ingredients, not only parameters and rules, but also structures, goals and assumptions of our growth paradigms. Looking differently at progress, measuring costs of social and environmental externalities beyond GDP is part of this. For a transformative "living" green economy, it may be necessary to bring what is currently marginal in our economic system to its centre. For example, cultural concepts like care, precaution, conservation and sufficiency might be introduced. Concepts of governance need to revisit current privileges, incentives, constraints and punishments. This could include new negatives, i.e. corrective feedbacks and transparent information flows. Injecting life into a green economy could mean acknowledging and building on the power of the citizen's domain of psychological and cultural identities and global citizenship.

8. Conclusion on the CDF framework

Part I and II of this paper showed how the CDF framework of dialectical thought forms can be applied to written documents. The analysis uncovers the kind of thinking of the author or group of authors reflected by a text. It can also help to uncover missing aspects in the construction of a topic and give guidance in illuminating further aspects of the topic.

Critical text analysis is also an expansion of the present scope of CDF. At the moment CDF is normally used in interviews to assess hidden cognitive or social-emotional dimensions of individuals, especially business leaders. But CDF can also be used for text or discourse analysis to transform the thinking of groups. This means a further development of CDF in three dimensions:

- from interviews to texts or discourse: We can use dialectical thought forms to analyse any spoken or written text. It would be very interesting to compare different types of discourse, dominant concepts, authors and types of text that expand thinking on the same topic. Dialectical thinking is socially relevant.

- from individuals to groups: We can use CDF to assess not only individuals, but also groups and their thoughts, values and feelings. We should not only focus on individuals, but also work with groups such as members of organisations, political groups and students. Here, there is big potential for transformation.

- from assessment to transformation: We can use dialectical thought forms not only to assess, but also to transform thinking. Dialectical thought forms are a tool for mind opening and transforming the world – or, at least, a little bit of the world.

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