

A New Approach to Dialog: Teaching the Dialectical Thought Form Framework

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If a simple epigram could sum up what is essential to thinking dialectically it should be that it is the art of thinking the coincidence of distinctions and connections. Its essence is fluidity structured around the hard core of the concept of absence and the 1M-4D relations it implicates.

Roy Bhaskar (1993, 190)

To my students

Abstract

Technologically driven culture change, impoverishment of undergraduate and graduate education due to a focus on obtaining employment, and the growth of global risks of human survival in the context of the depletion of nature increasingly put an unforeseen emphasis on human dialog and thinking. They also make seemingly “academic” investigations into the cognitive development of adults (on which quality of thinking and dialog depend) pragmatically relevant with unforeseen urgency.

This introduction to the Dialectical Thought Form Framework (DTF) by way of an introduction to the Manual of dialectical thought forms (DTFM; Laske 2008), delves into the intricacies of the thought form structure of thinking and its assessment. It was primarily conceived as a tool for making dialectical thinking better known, as well as a tool for designing programs for teaching it, beginning in high school.

The teachings at the Interdevelopmental Institute (IDM) over the last 15 years reached only a small number of adepts looking for strengthening their competitive edge. Today, however, what was taught should increasingly come to be seen as an urgently needed tool for reversing risky trends found in a society increasingly based on algorithms and social-media tools. Such tools massively strengthen pure “downloading” and control-thinking rather than deep thinking, with often dire political consequences recalling fascistic antecedents.

The privilege the author has enjoyed in his teaching and research endeavors is rooted in his having studied with Th. W. Adorno (1999), founder of Critical Theory and his encounters with Roy Bhaskar (1993), founder of Critical Realism, as well as Michael Basseches, whose pioneering empirical research on adult cognitive development (1984) has inspired him to pursue research in dialectical thinking further. This introduction to DTFM is meant to spread this privilege more broadly to those eager and able to change organizations, educational systems, educational policy at the state and/or federal level, and non-profit organizations that have in mind the best for society.

For cogent pedagogical reasons, the manual introduced here is organized around Bhaskar's Four Moments of Dialectic referred to as MELD. However, it embodies a significant difference from tradition including Bhaskar's work itself. In contrast to most existing conceptions of dialectic – a term that derives from Plato's Socratic dialogs – this manual puts forward a dialogical concept of dialectic as deep thinking in real time.

This text introduces the moments of dialectic of Critical Realism (Bhaskar 1993), together with their associated thought forms (Basseches 1984; Laske 2008; 1999), primarily as mind openers, thus as stimulants of professional as well as private discourse.

In a further step toward practicality, the dialog focused on in this introduction to DTFM is that occurring in real time in the attempt to reach insight into the real world, whether in teams, the class room, discussion forums, executive team meetings, or political debate. Dialog is thought to have the overriding political purpose of discovering one's own movements-in-thought in exchange with others.

The text of this introduction covers all relevant aspects of understanding, practicing, teaching and disseminating dialectical thinking, ultimately as a tool for culture change.

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Part I: Foundations of Real-World Dialog

Welcome to Dialog

Speaking to others pervades everybody's life and is the basis on which we speak to ourselves internally. But not every verbal exchange takes the form of a dialog.

Commands, queries, instructions, pure information exchange increasingly prevail.

Even in cases where dialog indeed occurs the emphasis is predominantly on content, on what is said, with scant attention paid to how it is said (or written), and the movements-in-thought that have led to what is said.

Even if the "how" registers *emotionally*, paying attention to the thought structure of what is said by a dialog partner *or oneself* is exceedingly rare.

This manual wants to change that, for reasons indicated above.

To his great benefit, the author has been led through research and assessment, to explore a pure form of focusing on an interlocutor's movements-in-thought in real time which is the natural outcome of carrying out *interview-based, semi-structured cognitive assessment* by way of the *Dialectical Thought Form Framework* (DTF).

He has come to think of this framework as an optimal tool for learning dialectical thinking through listening. Steeped in this kind of real-time experience, the Manual is written for the purpose, first, of recognizing, second, of reflecting upon, and third, of using dialectical thought forms in dialog. This threefold progression fits the author's interpretation of what Hegel called "making the effort of the concept" in order to reach truth.

The Manual wants to help understand the thought forms by which people think, which is what they do before they speak and, hopefully, before they act.

Why is attending to the *structures of thinking that underlie speech*, and thus dialog, important in so many professional fields? Among the many reasons, two stand out:

1. Speaking is not primarily a way of "describing" but actually of "creating" (constructing) reality. *We co-construct reality through our dialogs*, and while we may miss the mark of what is "real", we nevertheless have the opportunity of making the conceptual effort to come as close to reality as we can *in the present phase of our cognitive development as adults* (see below).
2. However, for various reasons partly anchored in the new internet and social-networking technologies, speaking has become separated from its experiential base, that is, one's own *movements-in-thought that give rise to "thinking"*. It increasingly follows thought models that in the process of "downloading" *are substituted for the experience of one's own thinking*, and thus override the latter (Greenfield 2015).

As adults, we construct the world in terms of a very personal, developmentally determined, *Inquiring System*. In focus in this Manual is the structure of the thinking this Inquiring System can be shown to engage in within the confines of a recorded semi-structured interview.

It is here that dialectic comes into play, because *movements-in-thought, when complex, transcend formal logic as well as systems thinking, and become "dialectical"* (see below).

Therefore, once an interview has been systematically evaluated in terms of the *four moments of dialectic* (Bhaskar 1993) and their *associated thought forms* (Basseches 1984; Laske 2008, 20015), the thinking ego in question can be precisely described in the form of a cognitive profile called a *Concept Behavior Graph* (see Fig. 11 below).

Why should this be of importance beyond mere linguistics or philosophy or even cognitive assessment?

The ability to discern, through listening in a dialog, the *structure* of an individual's or team's thinking is of great practical relevance in a world dominated by formal logical thinking. This is because adult thinking is *in no way* restricted to *logical thinking* but, as shown in this introduction, extends much further, not only to *systems thinking* but to *complex or dialectical thinking*. It is this latter type of thinking that is in focus in this Manual so that the tools offered here are all dialectical tools.

Near the end of her life, Hannah Ahrendt warned us (1971, p. 167) that getting hold of what she called “the thinking ego” is nearly impossible. She says:

For the trouble is that the thinking ego ... has no urge to appear in the world of appearances. It is a slippery fellow, not only invisible to others but also, for the self, impalpable, impossible to grasp. This is partly because it is sheer activity, and partly because ... as an abstract ego it is liberated from the particularity of all other properties ... and is active only with respect to the general which is the same for all individuals.

However, in the nearly 50 years since Ahrendt's death **new tools** have emerged for making the thinking ego **visible** once it utters speech and its speech is transcribed and linked to the *Dialectical Thought Form Framework* here introduced. It is these tools this Manual introduces to. They are tools of the greatest benefit in a world posing puzzling global problems on whose solution or dissolution our survival now depends.

Following Ahrendt it would seem that this “Manual” is undertaking an impossible task: that of making the *thinking ego* visible, and doing so through forms of dialog such as conversation, interview and discussion.

However, *language* comes to our rescue here, in the sense that we can formulate *abstract notions* like “unceasing change” which give body to thought forms and make them memorable, and thus make it possible to *link* thought forms to each other, coordinating them in constellations (see below).

But language is doing much more than giving body to concepts; it is *constitutive* of dialog, and dialog has a close historical link with dialectic, as shown by Plato's works referencing Socrates.

Dialog is also of major political importance for our time in which “*downloading*” and *formal logical thinking prevail*, wiping out speakers' mutual recognition (Hegel 1977).

This is the major point made in this Manual which introduces dialectic, *not* in its *monological* form as a tool for describing “the world” seemingly outside of us (Hegel, Adorno, Bhaskar), *but* as a tool for constructing the world through dialog between individuals and in teams.

Welcome to Dialectical Thinking

Based on what was said above, the reader rightfully expects to be focusing on what is called “thinking”. However, s(he) should be forewarned that the notion of “thinking” here explored largely runs counter to what s(he) may expect thinking to be.

The simple reason for this is that dialectical thinking in the dialogical form presented here is intrinsically and absolutely geared to understanding “how reality works”, so that *reality* is, in what follows, an equally important focus.

The manual thus engages three interrelated notions: dialog, thinking and reality.
(There is no point in thinking in a way that is unrelated to reality.)

When we speak of how thinking and reality relate to each other, the further notion that comes up right away is *truth*.

Here we immediately need to make a distinction between two kinds of truth: propositional and alethic truth.

- While *propositional* truth concerns language propositions (thus how humans talk about reality),
- *alethic* truth concerns truth regarding reality itself (regardless of how humans choose to talk about it).

You might, in what you say or write, achieve *propositional* truth and miss *alethic* truth entirely, as 2,500 years of philosophy clearly show.

Why might mistaking propositional truth for alethic truth be of concern in the modern world?

It might be of concern since the world you see is your own construction by way of the concepts (Liebrucks, 1964; Basseches, 1984).

So if the world you construct for yourself – depending on your present level of cognitive development as an adult -- is out of touch with the real world, you end up living in a fantasy world of your own, over and over *confirmed* by *propositional truths*.

What George Bateson called “the gap between how reality works and the way people think” can then never be closed, and *alethic truth* would *not* even be an issue.

However, I would assert that we live in a real world, and that we are disregarding how it works at our own peril.

In fact, *as embodied minds* we are part of it, and disregarding it can’t even be completely carried out, *except if you insist that formal logic represents the peak of adult cognitive development*. (Is there life after 25? L. Kohlberg asked. The answer is *no*, not if you never transcend formal logic.)

This is exactly the point where DTFM, here introduced, promises its user huge benefits. The DTFM has the purpose of helping thinking individuals close the gap George Bateson is referring to.

The author of this introduction to the manual does this by putting dialectic on an *ontological foundation* where thought and reality become inseparable (Liebrucks 1964).

Concretely this means that our conventional notion of “reality” changes to include an important new element: **Absence**; *what is not there* ... (Bhaskar 1993).

Absence, also called “negativity” (close to Sartre’s *négativité*”; 1943), is actually everywhere. What is not there *or not yet there* actually not only has a presence, it also has reality, or is *real*.

Let’s take Sartre’s example.

You go to a café to meet your friend Pierre, and Pierre is not there, Pierre is **absent**. *His absence is felt and thought as real, as a loss*, and engenders concerns about what might have happened to him, beyond being simply late. If you had firmly counted on Pierre being there because you urgently needed his help, his *absence* would turn into an ill or even a fatality.

In short, *absence* addresses that dimension of reality in which we find losses, omissions, empty spaces, social ills, lies, illness, death, etc. All of these are undeniably real, and no logical thinking can erase them.

So why not address them head-on, as part of reality?

That’s dialectical thinking, and that’s where Bhaskar’s work becomes fundamental for a dialogical dialectic.

Dialectical thinking is here explored following Roy Bhaskar’s work on the *four moments of dialectic* that ground Critical Realism.

As the term “*moment*” indicates, they are part of a larger whole which they go into and fall out of. Simply put, they are themselves in flux making up a totality in transformation. You can’t have one moment without the other; you exist always “between” the four moments and their real-time rhythmic.

In this way *moments* are the elements of “a dialectic”, that of your life. They are like elements of human thought that enter and leave your mental process in real time.

Rightfully, therefore, we can see moments of dialectic as *unfolding in human thought* by way of specific thought forms (Liebrucks 1964 f), and if we want to be “logical” about that we can speak of “four classes of thought forms” (Basseches 1984).

But make no mistake: human thought forms are just as connected and momentary as are the *moments of dialectic* that are constitutive of the real world.

Although you may be able to name them one by one, it would be an *error* to think of them as fixed and independent units of your thinking. (If you make this *error*, your thinking ego has no chance to make an appearance in your movements-in- thought.)

Before getting into more detail, let’s first assert that:

The *four moments of dialectic* unfold in human thinking in the form of *four classes of thought forms*, thereby creating an idiosyncratic *Inquiring System*, and that there are certain thought fallacies, listed on the right column of the table below (as “Thinking errs ...”), that such a system is typically prone to (Bhaskar 1993):

<i>Moment of Dialectic [Bhaskar]</i>	<i>Class of Thought Form [Basseches; Laske]</i>	<i>Reality Defined by Absence</i>
1M	Context [C]	First Moment. The real world lacks a unitary cause and is highly stratified. <u>Thinking errs</u> if making it centric and flat (de-stratifying it).
2E	Process [P]	Second Edge. The real world is pervaded by absences (geological shifts, loss, death, ills, etc.). <u>Thinking errs</u> if it denies them and paints the world as purely positive.
3L	Relationship [R]	Third Level. The real world is a totality of strongly interrelated, often incompatible, components. <u>Thinking errs</u> if it neglects interrelationships, thereby de-totalizing reality.
4D	Transformation [T]	Fourth Dimension. The real world is in unceasing transformation but offers entry points for human action. <u>Thinking errs</u> if it neglects transformation and denies the possibility of human intervention in the natural cause of events.

Table 1: Bhaskar's Four-Moments Dialectic - rendered in terms of human thinking

As you can now see, there is no way of defining moments of dialectic, or dialectical thought forms, independently of a concept of reality *that includes absences*.

(Think of Pierre absent from the café.) These absences show up in the world in different ways, however, which is important to take note of right from the start. See below.

The Purposes of this Manual

The purpose of this Manual (referred to as DTFM) is at least fivefold:

1. To re-vitalize an ancient Western thinking tradition called *dialectic* on the basis of qualitative research on the cognitive development of adults since 1976.
2. To help foster the pedagogy of dialectical thinking in schools, colleges, and universities at the earliest possible age (before the pre-dominance of logical and algorithmic thinking snuffs out all existing resources for holistic and systemic thought).
3. To safeguard logical thinking which is beleaguered by solipsistic uses of the internet, especially social media that lead to the under-nurturing of the prefrontal cortex where conceptual thinking, moral imperatives, and personality reside.
4. To help organizations re-assess the predominantly logical models on which their business and human resources strategies are presently based, and move them beyond constructs like "theory U" (Scharmer 2016) that deliver no new thinking tools beyond systems thinking.
5. To provide a manual for continued academic research on the development of dialectical thinking in adults based on DTF, the Dialectical Thought Form Framework.

These are, the reader will think, very diverse purposes. But think again! Once you realize that the world you see and consider as *real* is your own construction by way of concepts, and is thus a function of *your present cognitive-development level*, you will begin to grasp the underlying thread holding these purposes together. They all share two things:

1. The perception that there is a gap between “how reality works” and “the way humans think” (G. Bateson)
2. The notion that every human being, regardless of race, class, or nationality, has the cognitive resources *to advance beyond logical thinking* which relies on the untruth that “A is always A”, thus denying *Absence* (Non-A).

In fact, the realm of logical thinking compared to the scope and depth of reality is very, very small. *Only human thinking can be logical, while the real world never is or could be.*

Nor is the real world ever static as logic requires. And it is here that dialectical thinking comes in most powerfully: it is a key to understanding not only change but transformation.

To put it differently, *dialectic* is a discovery procedure aiming at truth in a world that is in unceasing transformation.

Combining truth and reality with unceasing transformation is, of course, a total conundrum for any kind of logical thinking, and that is precisely why we need to foster dialectical thinking - as undertaken in the manual here introduced.

These Purposes Seen Broadly

One might characterize the purposes above more broadly by saying that this manual is meant to remove dialectical thinking from the pedestal on which it has been placed by its admirers and critics alike. Once achieved (even partly), there is a greater likelihood that the pragmatic and practical benefits of dialectical thinking will be more easily seen.

Admirers have seen dialectical thinking as “critical” (critical theory, critical realism, critical thinking ...), while critics have seen it as “muddling logic” and “speculative”, as well as “forbidding”.

But reality, social and physical, is a good teacher, showing again and again that thought form #22 (see Table 5), for instance, which speaks to limits of stability and durability of complex systems, is actually “for real”, and that conceptions of the real world in terms of “change” (rather than transformation) are too shallow to capture “how nature works”.

This is a particularly important insight for all those sectors of society that are habitually built on formal logical schemes embodied in rigid organizational hierarchies and, increasingly, *algorithmic* technologies.

Although attempts at doing away with managerial hierarchies by replacing them by “circles” (Boyd & Laske, 2017) and notions like “circular economy” (De Visch et al., 2016) show a new understanding of complexity, there is still an immense amount of work to do in the way of propagating dialectical thinking in organizations and institutions, especially in teams (De Visch 2010, 2014). After all, huge challenges arise from within an unpredictable, thus logically “disruptive”, world in it is self-defeating to crave predictability.

One mighty barrier still needs to be overcome.

The culture in which “getting things done” has become more important than “thinking deeply” has in recent decades wiped out the courage to think creatively for oneself.

Such courage does not emerge quickly but requires long nurturing, and this nurturing is now largely stifled by educational systems that not only co-create but rigidly enforce the prevailing culture in which self-reflection is a “liberal arts” pursuit. For this reason, dialectical thinking has become, not only “forbidding” but bizarre. It is a major purpose of this introduction to DTFM to change this politically and otherwise risky situation.

Closed vs. Open Systems

Regarding human inquiring systems (“thinking”), an important distinction to be made is that between a closed and an open system. A *closed* system is a universe one can model by way of logical thinking and systems thinking – such as a system of traffic lights, or the algorithm that puts it into operation.

Such a system is *closed* since whatever inferences are made by or within it, whether it be by humans or machines (such as learning algorithms), do not accede to a self-reflective meta-level on which the system can be transformed in its own terms. It can only be “cloned”. While such a “quantitative” system can have qualitative effects, these effects themselves do not become integral parts of the system as they would in a living organism, for instance in human cognitive development (of which below).

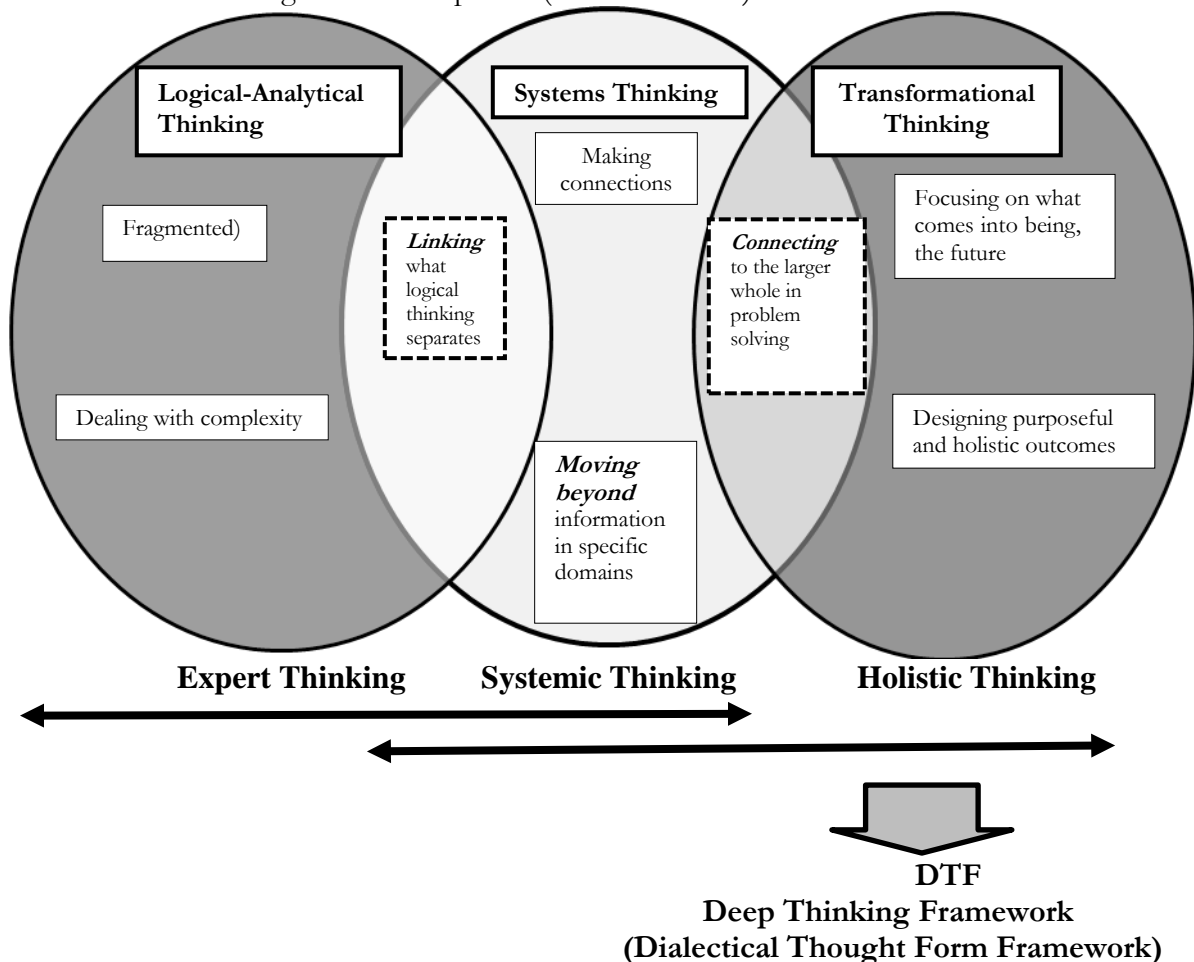


Fig. 1: The extension of logical thinking into systems thinking and transformational or “dialectical” thinking
 (Courtesy Jan De Visch, 2015)

By contrast, an open system is a living being, of whatever scope, existing in real time and subject to natural necessity, whether social or physical, or both. We can think of a beehive, an individual human being, or a city, or even the planet Earth in its entirety.

More specifically, we can think of the way individuals' cognitive capabilities expand over their lifespan. As developmental research extending Piaget's work since about 1973 (Riegel 1973) has shown, the progression from logical to dialectical thinking is real and can be said to occur in four phases (Basseches, 1984; Laske 2008, 2015).

Empirically, each phase is defined by a "fluidity index" based on systematically evaluating an interviewee's use of thought forms over the course of a one-hour semi-structured interview. Significantly, the criteria of evaluation deriving from the manual here introduced provide the evidential base for the four phases shown below.

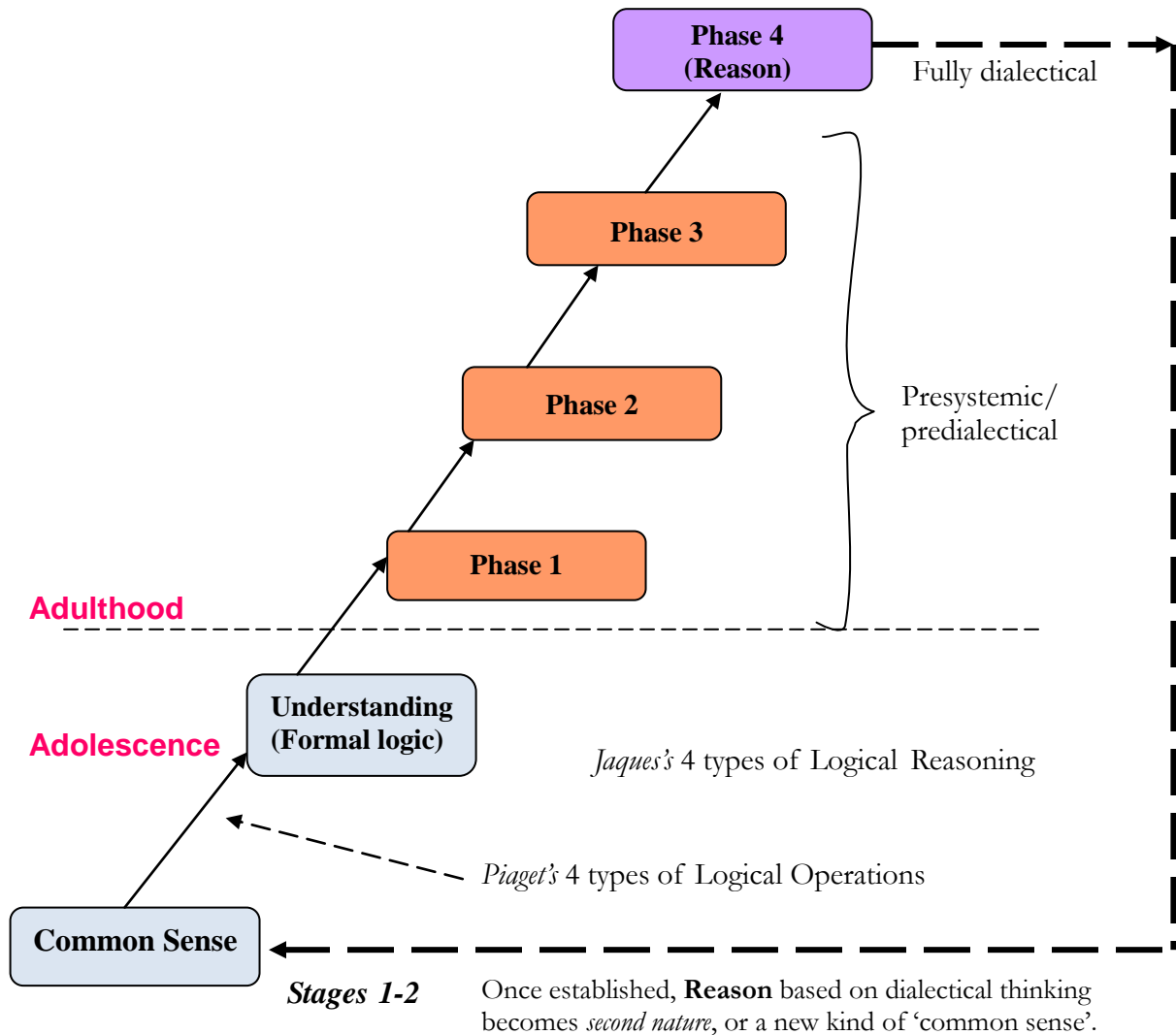


Fig. 2: Adult-Developmental Sequence of Levels of Complex Thinking
(equating to levels of Fluidity of Dialectical Thinking)

Although the characteristics of each of the phases vary empirically for different individuals, in a simplifying manner we can summarize research findings about the development of dialectical thinking by saying that the *mental growth toward dialectic* that occurs follows the footsteps of MELD, Bhaskar's four moments of dialectic (1993).

That is to say, for instance, that while in *phase 1 of cognitive development* individuals remain largely under the sway of 1M, or, in DTF terms, of **Context** thought forms (TFs), *phase 2 of dialectical thinking development* begins to show an increasing influx of 2E or **Process** TFs, showing a higher degree of *realism* of the thinker vis-a-vis **unceasing change** in the real world. *Phase 3* takes the *development of dialectical thinking* a notch further. It extends to an understanding of the third moment of dialectic (3L or Relationships), while *phase 4* shows a coordination of C, P, and R thought forms in the form of transformational thinking which grasps not only change (= P) but transformation (= T).

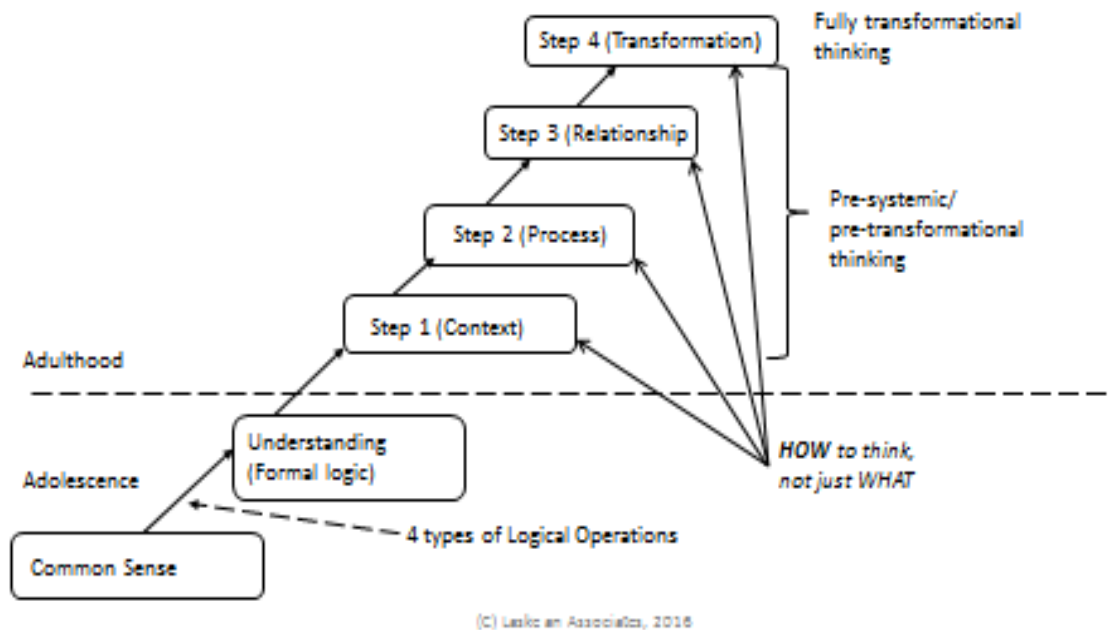


Fig. 3: Four Developmental Steps from Logical to Dialectical Thinking

We thus have before us a *living system* that, as in the *social-emotional* domain of *meaning making* (Kegan 1982), expands its reach to higher and higher levels of *complexity* which, in this case, are also higher levels of (*critical*) *realism* as to how reality works, both inside and outside of oneself.

The gap between “how reality works” and “the way people think”, of which G. Bateson spoke, is an adult-developmental gap, and thus not static nor simply fate, although it is certainly a determining part of the human condition.

Alignment with Bhaskar's Work on Dialectic

Since *dialectical* thinking, as all thinking, is not worthy of its name if not focused on *understanding* the real world, and thus on “truth” as an aspect of reality (Bhaskar's alethic truth), this manual has been configured as a repertory of tools for diminishing the gap between “how *reality* works” and “the way people think” (G. Bateson).

Having adopted Bhaskar's notion that *the real is "pervaded by **“absence”*** (non-being), or that *“negativity”* is equally, if not more, relevant than positive being, we are provided with tools for understanding how *absence* unfolds in the real world through four separate, internally related “moments of dialectic”. Important details are shown in the next table.

The Unfolding of Absence

<i>Moment of Dialectic</i>	<i>Class of Thought Form</i>	<i>Meaning of Absence</i>
1M	[C] Context	First <u>M</u>oment: Characterized by <i>alterity</i> (variety irreducible to a unitary origin), complex stratification, deep differentiation, Generative mechanisms of natural necessity not under human control. <i>Main error: De-stratification</i>
2E	[P] Process	Second <u>E</u>dge: Characterized by <i>absence</i> (non-being pervading what is real) “from which the whole circuit of !M-\$D links and relationships can be derived”, spanning the gamut of negativity, contradiction, and critique, thematizing the presence of the past and future, thus unremitting change, emergence. <i>Main error: Positivization, painting the word one positive color.</i>
3L	[R] Relationship	Third <u>L</u>evel: Characterized by <i>totality</i> , holistic causality, emergence, internal relationality and interactivity, split-off, illicit fusion, and fission. Strong link with 1M since <i>totality</i> is a structure. <i>Main error: De-totalization</i>
4D	[T] Transformation	Fourth <u>D</u>imension: Characterized by the <i>unceasing transformation</i> of complex systems. In the human sphere, implicit in 1M, 2E, 3L (the snakebite of dialectic). Present as the “absenting” of ills through human intentional causality in the form of transformative practice. <i>Main error: De-agentification.</i>

Table 2: The Unfolding of Absence (negativity) through the Moments of Dialectic (Bhaskar 1993, 392-393)

As seen, each moment of dialectic unfolds in human thought through dialectical thought forms, in such a way that stark limitations in understanding reality arise as a function of level of adult cognitive development.

These limitations show up as fallacies or structural shortcomings, above all the following:

de-stratification (C), *positivization* (P), *de-totalization* (R), and *de-agentification* (T; the denial of human intentional causality in producing transformative change in complicity with natural necessity).

As will become more apparent below, these fallacies are due to an impoverished use of thought form constellations, thus an undeveloped notion of Absence in its fourfold form.

While in Bhaskar's work, the four moments are ontological principles differentiating the world's natural necessity and associated elements of *absence*, in human thinking they take the form of four *perspectives on what the real world is like*, referred to as CPRT, as detailed below.

Basseches	Bhaskar (Ontology)			Laske	
<i>Form</i>	First <i>moment</i>	1M	<i>non-identity</i>	Context	C
<i>Motion</i>	Second <i>edge</i>	2E	<i>"negativity", absence, not yet</i>	Process	P
<i>Relationship</i>	Third <i>level</i>	3L	<i>totality</i>	Relationship	R
<i>Metaform</i>	Fourth <i>dimension</i>	4D	<i>human transformative</i>	Transformational System	T

Table 3: The Equivalence of Moments of Dialectic
in the ontological (Bhaskar) and epistemological domains (Basseches; Laske)
(Courtesy A. Snow)

By "perspective" is meant, *not* a relativistic point of view one of which is as good as any other, *but* rather a way of grasping the four (ontological) dimensions of reality *in their togetherness*. This togetherness is referred to by Bhaskar as MELD (1M-2E-3L-4D).

According to Bhaskar, the components of MELD account for what is "real" not one by one but only together (i.e., moments are *not* "quadrants" as in Wilber's writings, but are immanent in the quadrants). This has important consequences, among them a fundamental distinction between what is "actual" and what is "real".

For instance, "facts", engineered and focused on by logical thinking, are man-made (factum) and are "actual" in the sense of "what is the case", but not real.

What facts lack is exactly what dialectically is called *absence*, that which is *missing* from the facts, as for instance,

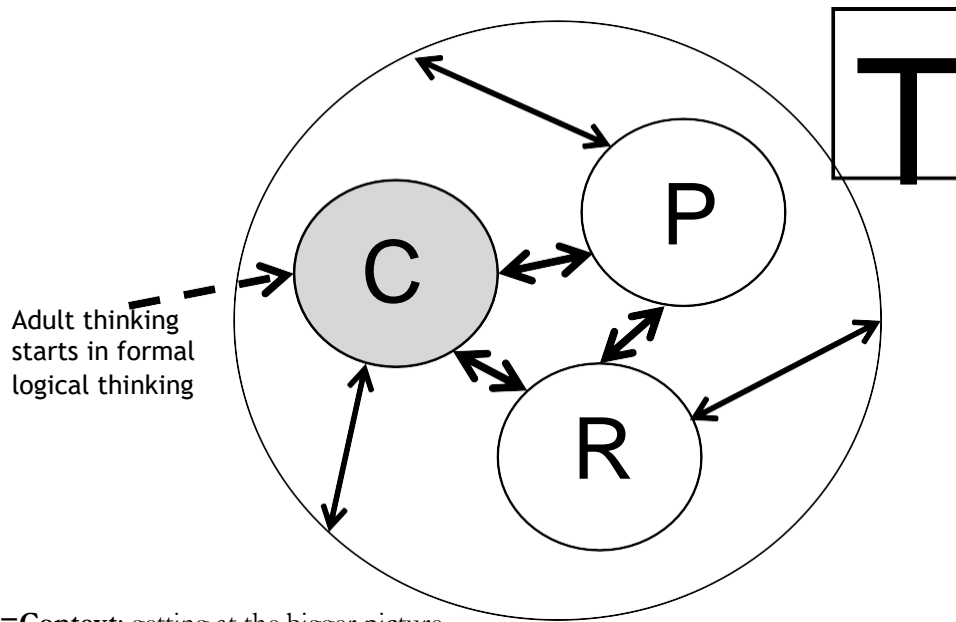
the broader **context** of which they are an *abstraction (C)*,
the **processes** that make them *cohere* and *brings them to attention (P)*,
the intrinsic, defining **relationships** they have *with other facts and higher elements of reality (R)*, and finally,
the **transformation** of reality they are part of and abstractions from **(T)**.

(In the real world there are no "side effects" as in an actual world, since nothing is abstracted from - as in facts, which are mere snapshots.)

As shown in Fig. 4 below, the human mind cannot comprehend transformations by focusing on a *single* moment of dialectic, or class of thought forms.

Only when thinking in terms of *all four classes* of thought forms *simultaneously* can reality be grasped.

Four Dialectical Perspectives



C=Context: getting at the bigger picture

P=Process: understanding emergent change

R=Relationship: understanding interdependencies

T=Transformation: understanding imbalances, disruptions, and shifts

Fig. 4: Four dialectical perspectives (C, P, R, T) that, in their coordination, give rise to dialectical thinking

In terms of using thought forms that means that C,P,R thought forms not only need to be elaborated, but linked and coordinated with each other in constellations (of which below) for human thinking to be realistic about “how reality works”.

Otherwise, the gap between reality and how humans think will remain intact, to the constant “surprise” of logical thinkers.

This facet of dialectic is made clear (“**pointed to**”) in the following figure:

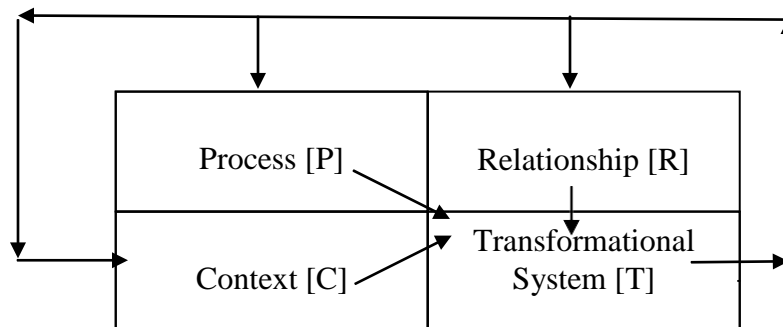


Fig. 5: The Four Dialectical Perspectives that Unfold the Four Moments of Dialectic

The diagram shows the four classes of thought forms which make explicit Bhaskar’s four moments of dialectic in the mind as linked by arrows.

It comprises two sets of arrows:

1. The *internal arrows* indicate that coordinating the CPR perspectives is a pre-condition for being able to hold a T-perspective on the real world.
2. The *external arrows* indicate that the CPR perspectives are incomplete expressions of the T-perspective because they are intrinsically transformational but in isolation fail to fully articulate their common origin.

Another way of understanding the meaning of the two sets of arrows in Fig. 5 is to speak of the “snake bite” of dialectic. Dialectical thinking is a way of thinking that “bites into its tail”, or is a *circular system* in which all MELD components and all CPRT perspectives intrinsically depend on each other. (In isolation from each other, they are mere abstractions).

That is, only together do they form a transformational system articulating reality at a meta-systemic level, that of *alethic* truth aligned with *propositional* truth: the superior purpose of all human “thinking”.

To give an example using a beehive: in each of the four CPRT perspectives the living being called a bee hive looks different, in that:

- From the perspective of C, the beehive is just a set of 10 wooden frames standing in a wooden box encompassing them.
- When our mind moves to the Process perspective, we become aware that C alone cannot account for the reality of the bee hive since it cannot grasp the processes (P) that bring it to life and hold it together (e.g., the seasonally changing ways the bees behave toward each other, the queen, and the external world).
- But even thinking of the bee hive in terms of C as well as P is insufficient for grasping the hives’ full existence in the real world. This is because the hive is constituted by a dense set of, not external but intrinsic, relationships without which it could not be what it is.

These are *relationships that change over time*, thereby fundamentally altering how the hive as a whole behaves throughout the four seasons.

In short, in the Relationship-perspective the mind can grasp the reality of a bee hive as a shared *common ground* of components that are “other” in regard to each other, and as “other” are together defining elements of the beehive’s identity.

- Finally, from a MELD and CPRT perspective alike, the living reality of a beehive, just like that of an individual, a city, or planet Earth, can be grasped only if the C, P, R, and T perspectives are “*coordinated*” with each other.

This entails that we use the four dialectical perspectives and the thought forms that unfold them as a discovery procedure in searching for what is real or what is the truth, as we do in dialog that is worthy of that name (a developmental achievement, nothing is a “given”!).

Further Distinctions within Dialectical Thinking

At this point, further distinctions within dialectical thinking can be helpfully made.

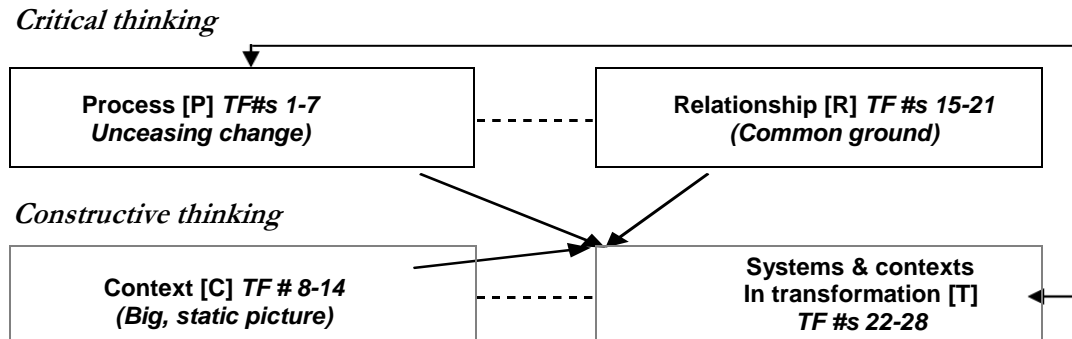


Fig. 6: Critical vs. Constructive Thinking
from the Perspective of the Four Classes of Dialectical Thought Forms (CPRT)

Logical vs. Dialectical Thinking

While *logical thinking* is bound to the **Context** perspective (C), *systems thinking* is an attempt to embrace more emphatically the *relationships* that connect elements of a system.

However, since what is considered a relationship in systems thinking is only an external, logical, not also an intrinsic, dialectical relationship, systems thinking goes only half-way toward a truly holistic and systemic way of thinking in the sense of dialectic.

As Fig. 6 makes clear, all four perspectives are equally and simultaneously involved in moving from actuality toward reality. With each moment of dialectic and its thought forms, what is seen as purely positive, or positively “there”, shows itself as pervaded by *absences*.

The notion of **absence** has different meaning *relative to each moment of dialectic*:

- In 1M = Context, *absence* resides in the layers forming reality, regardless of whether these layers are virtual, actual, or real. They are like the spaces between words without which texts could not be coherent and understood as “texts”.
- In 2E = Process, *absence* is foundationally involved in the Non-A that is paired with every A, thus represents the past and the outside of A that logical thinking pushes into the shadow of Non-A and calls “false”, stopping thought in its tracks.
- In 3L = Relationship, *absence* lies in the differences between the parts of a whole and the parts and the whole itself that are constitutive for how the whole is shared among the parts as “other” to each other, by which alone they can share the whole and enjoy being part of it.
- In 4D = Transformation, these different meanings of *absence* coalesce into what *needs to be* “**not there**” for there to be transformation (empty spaces into which new realities flow), which makes what is “**not yet**” or “**no longer**” there the stuff *that comes to be there*, or the past and the future in the present (while “change” is simply a “no longer there” that fades away into nothing out of its accord).

Critical vs. Constructive Thinking

A secondary aspect of Fig. 6 should be taken note of.

Within *dialectical* thinking, we can distinguish two different but related ways of thinking the world: *critical* and *constructive*.

While an individual can think “critically” in terms of *logical thinking* by making inferences, *critical dialectical thinking* is much more radical and deep.

This is because when we think in Process or Relationship terms – in terms of how something came to be or could not be itself without what it is not itself – we essentially stop taking what “is” (that is, “*givens*” or “*downloadings*”) for granted, by tracing how it came into being and is developing further (P).

Also, we are aware that whatever we are focusing on in our thoughts could not even exist without that which it excludes *and is thus relative to it, and can form an integral whole only together with it* (R).

Dialectical Thinking as Adult-Developmental Achievement

It is often assumed that an individual is either a dialectical thinker or not, but this is *not* cogent. Dialectical thinking *does not* spring fully grown from the head of the goddess Athena but is rather an *end result reached over the course of adult cognitive development*.

According to research (Laske 2008; Basseches 1984), it is based on resources maturing between ages 25 and 100.

However, needing institutional nurture, such thinking does *not* typically develop in cultures that take scientific thinking (“Understanding”) to be the end-all of cognitive development, and is thus always a cultural desideratum, not a guaranteed outcome.

Four Eras of Human Cognitive Development

Fig. 7 below, displays in simple form the development of human thinking through four “eras”.

As seen, it leads from Common Sense into which we are born (and which we never leave behind)
to Understanding on which scientific work is based,
on to Reason and **Practical Wisdom** (of which later).

Central in this *progression* is the movement that begins in late adolescence, prior to the point of full maturation of logical thinking, and continues throughout life.

This “developmental” movement leads
from Understanding (U) *via* “Dialectic” (D) *to* Reason (R).

The UDR Movement (Understanding, Dialectic, Reason)

Let me explain the UDR movement from Understanding (U) via Dialectic (D) to Reason (R) (Bhaskar 1993, 20-33) further with the aid of Figure 7:

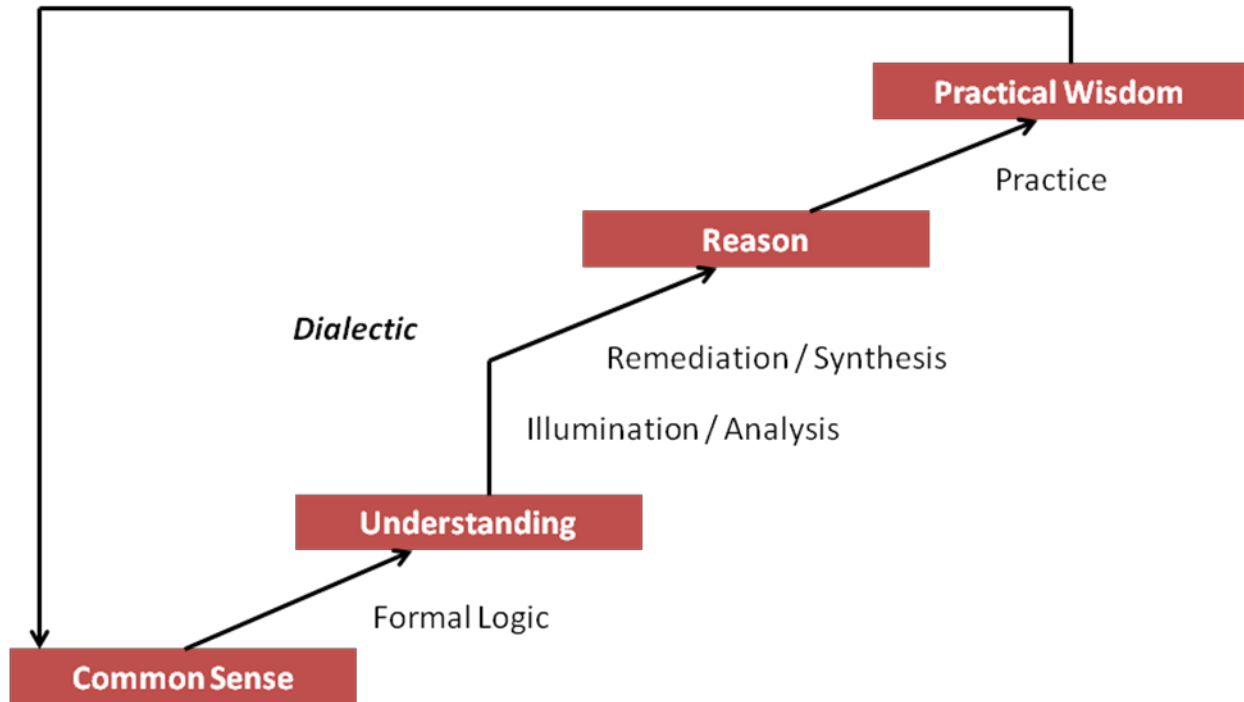


Fig.7: UDR Movement from Understanding to Reason via Dialectic
(Courtesy Bruno Frischherz)

“Reason” is an ancient term with many meanings. Its meaning here derives from Hegel where it indicates a complex way of thinking that transcends formal logic by embracing “negativity” (*absence*). This is a useful term for speaking about complex thinking, as shown by Hegel himself in his *Phenomenology of Spirit* (1805).

The simplest way to spell out the meaning of Reason, both in Hegel and here, is to say that Reason *is* human Understanding that has experienced *absence and negativity* “the hard way”, *by being disillusioned again and again about what is Reality*.

As in Hegel’s *Phenomenology*, the “*thinking ego*” (Ahrendt) learns to think by doing, in discrete steps, and along the way *Reality again and again escapes it*. This clearly entails that what is happening in the world is *not* “change” (moving from “A” to “B”) but “transformation” (moving from “A” to “Non-A” [negativity] and further to “A-prime”), This movement from “A” to “A-prime” via what is logically “false” (“Non-A”) is the crucial stumbling block of formal logical thinking on its way to dialectic.

The reason for this is simple: there is *no preservative negation* in logic whereby what is false (not there) could be preserved in a memory store to serve as a vital element flowing into “A-prime”, *an integral whole born of synthesis*.

The UDR movement is thus a movement that cannot be made without grasping *absence*, a short term for the *Otherness or Non-A* into which the thinking ego drops when it “*thinks*”. We say that a system (e.g., a human Inquiring System) has been transformed *when – not despite* but *because of* -- the changes it has undergone, it has maintained its identity.

Without *enduring absence* in the form of change, disillusionment, loss, etc., the system could *not* have retained or achieved its identity. Why? Because we are dealing with a living system that remains identical with itself only by *unceasingly transforming!*

Understanding dialectic has just become easier! We have seen that dialectic is *not* just something “in the head” but something that happens to the head itself. Cognitive systems are living systems that – over an individual’s life span -- pass through four eras of development referred to as *Common Sense, Understanding, Reason, and Practical Wisdom* (Bhaskar 1993), as shown above. Each era is characterized by a specific Inquiring System that determines the questions asked by an individual about the real world.

Developmental Inquiring Systems

Moving from one developmental *Inquiring System* to another, more complex, one is called “life”.

While the era of *Common Sense* is void of any sense of conflict,
in *Understanding* there is a firm grasp of conflict and opposition,
and therefore also of how to separate one thing, A, from another, non-A.

Becoming aware of the fact that things can be in conflict with each other is the achievement of Understanding. However, “Understanding” does not know what to do with conflict, declaring it simply “false” and thus getting it out of the way by denigrating it as “false”.

Preservative Negation

The *thinking ego* needs to take another step, one toward synthesis.

Having separated out A from non-A, *it now needs to move to A-prime*,
and this can only be done by taking non-A – in its many different meanings – seriously.
To do so means, first of all, to “*preserve*” it in one’s mind as something worth remembering,
by putting it into a memory store. We speak of “*preservative*” (rather than erasing) “*negation*”.

Let’s use a concrete example to show this better.

Although according to Gertrud Stein “a rose is a rose is a rose”,
(which is pure Understanding *stuck in formal logic*),
really grasping the reality of Rose entails paying attention *to all that the rose is not*,
such as its past and outside,
all that is around it making it possible for it to live.

This past and outside is the *non-A* of the rose,
and only if we include it, can we have a Rose (a living system).
The Rose is born of “preservative negation”.
Negation also keeps it alive *since to develop*, the Rose will have to weather – literally – the
many changes that will be upon it.

Reason

In moving from “rose” to “Rose” we have entered Reason.

Reason enables us to *experience living things* (not just see objects),
those that have in them the core of their own decay,
and who live until decay overtakes them, in a transformation called *Life*.

As indicated in Fig. 7, the cognitive-developmental movement of the human mind does *not* end in Reason *but* rather in Practical Wisdom.

What is meant by this is that: how *logical thinking* is *used*, changes - *within* Reason - where making distinctions, dealing with oppositions, and absences generally instigates a further development.

We can describe the *end result* of this development as the *complete integration* of *thinking with, and in, dialectical thinking*.

Thought Forms

This is best explained by the use of thought forms, the topic of this manual.

A thought form such as TF #1 is referred to as “unceasing change”. In *different eras of cognitive development*, “unceasing change” has very different meanings for an individual or group:

- For **Common Sense** *unceasing change* either *means nothing*, or is that which is to be expected and about which nothing can be done.
- For **Understanding**, *unceasing change* has to be “put in brackets” because scientific understanding *can only take snapshots of reality*, and can at best put one snapshot next to the other and compare them.
- For **Reason**, *unceasing change* is the order of the day, and can be inquired into by using dialectical thought forms.
- For **Practical Wisdom**, *unceasing change* is actually not “unceasing” nor is it “change” (thus it is a misnomer); it is an *enduring transformation* that often shows *aspects of complicity* which Reason can use to act upon Reality in a way that relieves *absences*, such as ills, needs, and constraints.

What, lastly, is meant by the arrow pointing back from Practical Wisdom to Common Sense?

The arrow indicates the *hypothesis* that once logical *and* dialectical thinking are fully integrated (and Practical Reason is thus reached), thinking assumes a form very similar to Common Sense, only at a higher level than ordinarily realized.

The best way to think of this achievement is to see dialectical thinking becoming “second nature”, something that no longer requires much conceptual effort.

In **Practical Wisdom**, the “*effort of the concept*”* (Hegel) made all along becomes easier to make because dialectical thinking, fully mature, has become the natural way to think, with no regression into purely formal logical thinking.

[* Effort of the concept:

The effort required by humans to consistently activate in their minds all of the four moments of dialectic']

Let us now summarize what we learned about the four eras of human cognitive development.

1. We are all *born into* the era of **Common Sense** and never really leave it behind, thus always stay to some degree outside of the UDR movement. Common Sense gives us precious, *perception-based*, knowledge that remains *largely beyond conscious grasp*, and is the mother soil of all subsequent cognitive development.
(Example: tying your shoes, which no formal logical device, such as a computer, can do.)
2. **Understanding** is the big next step, reached through schooling. Between 10 and 25 years of age (a long time...) we learn to master formal logic which excels at *making distinctions*. In this way, we can partake of the sciences, and can master more mundane things such as figure out a traffic light system in which green is always green and never red. This powerful tool can, however, become *a powerful hindrance in grasping reality* because the real world is not logical, only the human mind can learn to be.
3. The crucial step toward seeing the light of **Reason** is dialectic. By understanding the four moments of dialectic and the thought forms that unfold them in the mind, it is realized that:
what formal logic considers as “false”, namely “non-A”, is actually a vital ingredient of the existence of A, whatever it may be,
and that one needs to move beyond “non-A” in a preservative way
so that the synthesis called “A-prime” can be reached.
(“A-prime” is “A *transformed*”, not just changed.)

It is this step that assures that complex thinking in the sense of holistic, systemic, and transformational thinking can occur that is needed to move as close as possible to *critical realism* in one's understanding of the world.
4. However, even *Reason* is *not* fully secure since it can, depending on the individual, give up its light and return to formal logic.

Therefore, in the UDR movement, **D** (Dialectic) can fail and **R** (Reason) can be reduced to **U** (Understanding).

It is *only in Practical Wisdom* that this *risk* of **R** regressing to **U** is overcome, because in Practical Wisdom it (D - Dialectic) has come into its own.

DTF Developmental Thought Form Framework (Deep Thinking Framework)

At this point, DTF, the Developmental Thought Form Framework, appears in a different light. One can now see that it contains all the tools necessary to move *from Understanding back to Common Sense, via Dialectic and Practical Wisdom*.

DTF thus sheds new light on human cognitive development in its entirety, as well as on the human condition of being in the world without, potentially, ever coming close to it.

The Structure of the CDF Dialectic

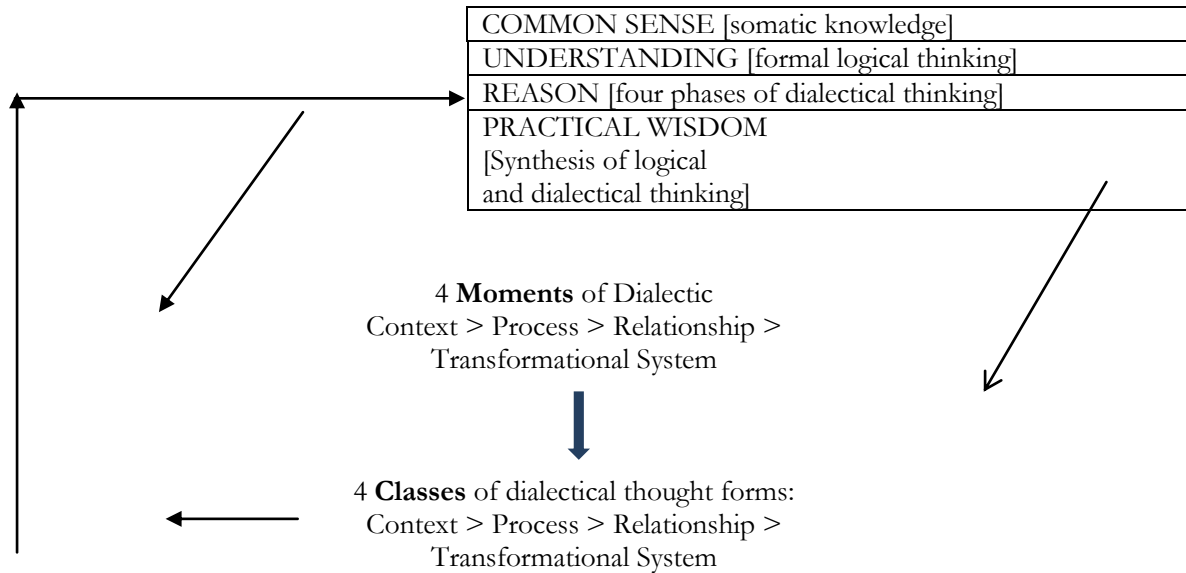


Fig. 8: Structure of the CDF Dialectic
(Courtesy J.DeVisch)

The four rectangular boxes at the top of the diagram refer to the four *eras* of adult cognitive development that human *Inquiring Systems* go through.

The development is grounded in the *four moments of dialectic* which appear in the mind as four *classes* of thought forms referred to in DTF as CPRT,

It takes living through four eras of cognitive development to "return to life", as Hegel says.

A Dialectical Concept of "Making Experiences"

Adult cognitive development is a process presently almost entirely neglected in our culture, except where it is seen as a matter of importance as, for instance, in organizational problem solving and decision making.

When "*thinking*" is taken seriously at all, the *assumption* is made (and demonstrated) that it equates to *identity thinking excluding absence*, and is the only way of understanding the real world (rather than being the most certain way of missing it).

Despite of paying lip-service to "critical thinking", our culture essentially has no notion of the *existential relevance* of adult cognitive development for individuals' and society's *quality of life*.

Much the same holds true for the topic of "experience". While "experience" is much talked about as something to "exceed", the way it comes about in individuals in structural terms is not a topic of serious research.

However, once we distinguish, as we do in the *Constructive Developmental Framework*, between social-emotional and cognitive development *and separate these from psychological issues*, we move a step further toward understanding how human experiences of the real world come about.

Fig. 9 shows how *making experiences* can be understood on adult developmental grounds.

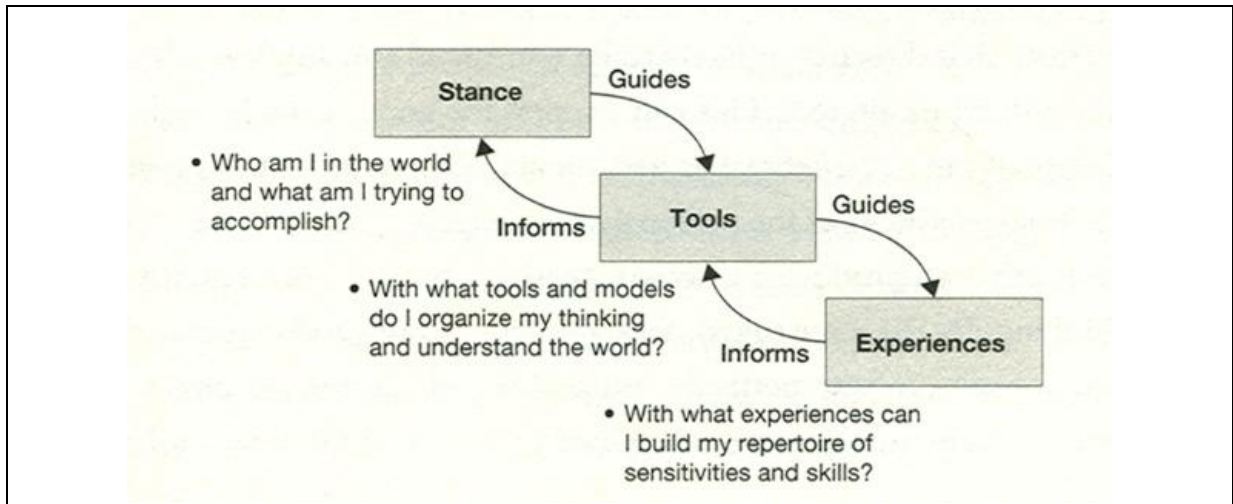


Fig. 9: Feedback Loop involved in “Making an Experience”

As shown, individuals make experiences based on two interactive constituents:

first, their *social-emotional Stance* which equates to their level of meaning making (Kegan 1982), and second,, the *cognitive Tools* they are using, such as logical *and/or* dialectical thinking.

As shown, there exists an ongoing feedback loop *linking these two constituents* to each other and to experience itself.

While this feedback loop is often conceptualized as “learning”, it would be more accurate to conceive of it as an adult-developmental process that enables learning.

Learning is simply not development.

Let’s take a concrete example.

If you define yourself by others’ expectations, thus based on no cohesive value system of your own (Kegan’s “stage 3”):

You will experience not only yourself but also the social and physical world around you in terms of dependence on others.

(While this is going to be more noticeable in the social world, the way you understand your body in the world will equally be “*other-dependent*”).

However, once you move to a *self-authoring stance* and are thus grounded in your own idiosyncratic value system, the world you experience changes dramatically:

You have become a smaller *subject* and the world has become a larger *object* for you. In a further developmental movement, the world increasingly becomes *more than an* “object”, morphing into a totality of which *you* are a small but constitutive part.

Part II: Dialoging Tools of Dialectic

Using a Short Table of Thought Forms

The reader now realizes that in order to *understand* the world around it, the thinking ego uses *thought forms*, and that grouped together thought forms make up a living, transformational system that increasingly develops over a person's life time ("mind").

Since the mind is a "system", thought forms never exist in isolation; they are therefore always ready to be *deepened, linked, and coordinated*.

Since the thinking ego itself never appears, being "sheer activity" (Arendt), TFs expressed in speech are its only visible and audible evidence.

Even if *speech* is not voiced and remains "*inner speech*" (leading to action), it is nevertheless *speech* through which TFs make an appearance.

No matter how many thought forms we might decide to start with, naming them is a first crucial step. Embodying them in words makes them memorable, *pointable-to, extendable*.

For strictly pedagogical reasons, let us start with 12 thought forms, 3 for each of the four moments of dialectic. [CPRT x **pel** = 4TFs x 3TFs = 12TFs]

In the "short" Table 4 below rows present the four *moments* of dialectic (MELD) in the form of the 4 **classes** of thought forms (CPRT). They are differentiated by 3 columns that distinguish degrees of depth of dialectical thinking, thus of spelling out MELD.

PEL (*p,e,l*) Integration

As illustrated by the Process (P) class of TFs, the degrees of depth are the following:

1. **p**ointing to (p) -- **Pp**
2. **e**laborating (e) -- **Pe**
3. **l**inking (l) -- **Pl**

Let us call this sequence *the "pel" sequence, or PEL*.

The sequence indicates a progressive deepening of thought such that thoughts ("utterances") initially *pointing to* X get *elaborated* further into X1 and finally become *linked to* other thought forms, such as Y to Z.

Although the **pel** sequence is outwardly linear, by expanding a thought to related thoughts the mind creates groupings or constellations of thought forms that leave all linear logical thinking behind.

The following "short" Table 4 illustrates the deep *integration* achieved by the PEL process through applying **p,e,l** to a single thought form in each of the CPRT classes of TFs.

For *historical reasons* the numbering of the 28 Thought forms of the four classes has been: **P**rocess TF#1-7, **C**ontext TF#8-14, **R**elationship TF#15-21, **T**ransformation TF#22-28.

However, adult thinking begins in C (see Fig.4) – Context – so the both the table's vertical order and *the process is always CPRT*.

Table 4, Integration, illustrates the process. To follow it refer to *Table 5, Compact Table of Thought Forms*, in which the **p,e,l** progression has been colored **p** gray, **e** grayer, **l** grayest.

pel→	<i>p</i> - pointing	<i>e</i> - elaborating	<i>l</i> - linking
CPRT classes↓			
Context (C) (TF#s 8-14) Eg: TF# 8	Cp : Relationship between part(s) and a whole TF# 8 →	Ce : Structure and stability of a system →TF# 12→	Cl : Multiple contexts and frames of reference →TF# 14
Process (P) (TF#s 1-7) Eg: TF# 2	Pp : Emergence and inclusion of opposites TF# 2 →	Pe : Patterns of interaction →TF# 4→	Pl : Embeddedness in process →TF# 7
(R) Relationship (TF#s 15-21) Eg: TF#16	Rp : Bringing elements into relationship TF#16 →	Re : Structure of relationship →TF# 19→	Rl : Patterns of interaction and influence →TF# 20
Transformation (T) (TF#s 22-28) Eg: TF# 22	Tp : Limits of System Stability TF# 22 →	Te : Developmental movement of systems →TF# 24→	Tl : Comparison and coordination of systems; emergence of new entities →TF# 25-26

INTEGRATION

(“Short”) Table 4: PEL (*p*,*e*,*l*) Integration: Dialectical Thought Forms Classes simplified
Courtesy Iva Vurdjela

The 4 classes of TFs listed in the first column of the “short” table above are *sequenced* in terms of how they show up in *cognitive development*, namely, in the sequence of C>P>R>T. To each of these class specifiers the tags *p*, *e*, and *l* are attached.

While [use of] **Cp** simply *points* to a whole composed of parts, a *deeper* way of articulating the whole as a context is indicated by **Ce** that *elaborates* a part- whole compound by describing its detailed structure. When elaborating this description further by way of **Cl**, the thinker entertains the notion that there is not simply a single compound to focus on.

Rather, it may be seen in multiple ways, thus denoting viewpoints or frames of reference, or else that there exist, in fact, many different compounds all of which merge into a single one because of a constitutive relationship that holds them together.

Table 4 Summary: *pel* 12TFs (4 pointing, 4 elaborating, 4 linking = 12) – See Table 5

Progression>>>	<i>p</i> (yellow)	<i>e</i> (green)	<i>l</i> (blue)
C → → →	TF# 8→	→TF# 12→	→TF# 14
P → → →	TF# 2→	→TF# 4→	→TF# 7
R → → →	TF# 16→	→TF# 19→	→TF# 20
T → → →	TF# 22→	→TF# 24→	→TF# 25-26

Since **thought forms guide attention**, one might read the table as suggesting that there are 12 aspects of a subject matter, “X”, that a thinker can decide to focus on, depending on his/her depth of thinking, or level of cognitive development.

In the case “X” stands for the *concept* of “house”, a thinker can choose to simply mention “house”, or can elaborate in detail what s(he) means when using the concept “house”.

Movements-in-Thought, and Listening, Constellations, and Coordination

Of course, *a more developed thinker would not restrict her/himself to mere pointing-to* but would either *elaborate* “X”, or *link* it to “X1” to “Xn”.

Such a “*movement-in-thought*” regarding “X” can be pictured as a movement through Table 4 in real time, overriding its static two-dimensional form.

Accordingly, thought forms, in whatever class, take the form of extensions of each other, by which an initial movement-in-thought eventually “spills over” into another class of TFs. In this way, logical barriers break down that *would have kept the thought confined to a particular class* like a prison cell.

We therefore speak of “*coordinating*” thought forms *of different classes*, forming ever more powerful TF sequences (called *Constellations* below).

Listening is a form of *knowledge acquisition* based on absorbing, and decoding, the verbal representation of reality *constructed* by an interlocutor.

In terms of dialog, the *p,e,I* sequence discussed above has a second, related function, namely that of enabling *deep listening* (Sherratt 2002). In light of this, Table 4 is equally a map for listening-to-interlocutors that *enables interventions* driving dialog deeper. (This also holds for Table 5, below).

An interlocutor A listening to B, upon recognizing -- or inferring -- a thought form presently articulated by B can re-direct B's train of thought in order to increase either the scope or depth of his/her thinking.

S(he) can also decide to abstain from jumping off B's train of thought, staying very close to it as in DTF cognitive interviews, and thereby help B realize the depth of thought that could be reached relative to where B began "thinking".

Just as a *speaker* moves deeper and deeper into a particular subject matter, so an attentive, wholly present *listener* will resonate with what is said by an interlocutor, and then *potentially move ahead of the latter to come to conclusions* about, not only what the interlocutor is saying, but what s(he) *could be saying* and is for some reason withholding.

And then the *listener*, depending on a decision (she) makes about how to “*be with*” the interlocutor, *can either focus on the deeper meaning* of what was just said, *or decide to move ahead* of the interlocutor and challenge her/him, making her/him aware of *missing elements* in what she articulated.

And so ultimately, movements-in-thought are always simultaneously movements-in-listening. The two movements are intertwined in dialog, and thus are inseparable. One without the other sends us back into monological dialectic.

Using the Compact Table of Thought Forms

The *p,e,I* sequence, then, indicates a deepening of dialectical thinking over the course of a dialog or a text unfolding in real time (including as manifest in a text written by an individual or team).

But how “deep” is deep? Table 5: Compact Table, below, sheds light on this question, by expanding the 12 thought forms in Table 4 to $7 \times 4 = 28$ (Basseches 1984; Laske 2008).

COMPACT TABLE OF THOUGHT FORMS

[refined from Bopp 1981 and Basseches 1984]

Process TFs	Context TFs	Relationship TFs	Transformational (Meta-systemic) TFs
1. Unceasing motion, negativity <i>Contrast: 22, 24, 28</i>	8. Contextualization of part(s) within a whole; emphasis on part <i>Contrast: 10-13</i>	15. Limits of separation. Focus on existence and value of relationship <i>Contrast: 16-21, 25, 26</i>	22. Limits of stability, harmony, durability (incl. quantitative into qualitative changes) <i>Contrast: 1, 3, 12, 23, 27</i>
2. Preservative negation, inclusion of <i>antithesis</i> (<i>non-A</i>) <i>Contrast: 21, 23, 27</i>	9. Equilibrium of a whole; emphasis on whole <i>Contrast: 10-13</i>	16. Value of bringing into relationship <i>Contrast: 15, 17, 19, 21, 26, 28</i>	23. <i>Value</i> of conflict leading in a developmental direction <i>Contrast: 2, 5, 22, 24, 27</i>
3. Composition by interpenetrating opposites, correlativity <i>Contrast: 7, 19-22</i>	10. (Description of) structures, functions, layers, strata of a system <i>Contrast: 8-9, 11-13, 25</i>	17. Critique of reductionism and “de-totalized” (thus isolated), entities separated from their shared common ground. <i>Contrast: 15, 16, 18-21</i>	24. <i>Value</i> of developmental potential leading to higher levels of individual and social functioning <i>Contrast: 1, 23, 27</i>
4. Patterns of interaction <i>Contrast: 2, 7, 19-20</i>	11. (Emphasis on the) hierarchical nature of layers within systems <i>Contrast: 8, 9, 10</i>	18. Relatedness of different value and judgment systems <i>Contrast: 15, 17, 20, 21</i>	25. Evaluative comparison of systems in transformation <i>Contrast: 10, 14, 26, 28</i>
5. Practical, active character of knowledge <i>Contrast: 23</i>	12. Stability of system functioning <i>Contrast: 8, 9, 10, 22</i>	19. Structural aspects of relationship <i>Contrast: 3, 4, 15-17, 20-21</i>	26. Process of coordinating systems <i>Contrast: 15-16, 25</i>
6. Critique of arresting motion (reification) <i>Contrast: 7, 28</i>	13. Intellectual systems: frames of reference, traditions, ideologies <i>Contrast: 8, 9, 10, 28</i>	20. Patterns of interaction in relationships <i>Contrast: 3, 4, 15, 17-19, 21</i>	27. Open, self-transforming systems <i>Contrast: 2, 22-24</i>
7. Embedding in process, movement <i>Contrast: 3-4, 6</i>	14. Multiplicity of contexts (non-transformational) <i>Contrast: 25, 28</i>	21. Constitutive, intrinsic relationships (logically prior to what they relate) <i>Contrast: 2-3, 15-20</i>	28. Integration of multiple perspectives in order to define complex realities; critical of formalistic thinking. <i>Contrast: 2, 6, 13-14, 16, 25</i>

Thought Forms [#8-9, #10-12], [#15-16, 19-20] are closely linked. TF #s 23-25 entail valuations.

Basseches' original schemas #22-23 have been subsumed under TFs #22 and #28, respectively.

[Schema #22 concerns qualitative change deriving from changes in quantity;

schema #23 concerns the interdependence of form and content.]

(Contrasts : **Bold** denotes listing in each separate TF's detailed discussion in Manual)

Table 5: Compact Table of the 28 DTF Thought Forms

[In this table, class P precedes class C for purely historical reasons found in Basseches 1984]

(The DTFM contains detailed discussion of each thought form and its contrasts)

“Compact” Table 5 comprises 4 columns, one each for each class of thought forms, and 7 rows, one each for each thought form within each class. The thought forms (TFs) have integer names ranging from “1” to “28”, and can thus be referred to individually, both in using them and in describing them as heard in others’ speech flow.

Actually, the table is itself an expansion of the *pel* sequence, only that we are now *no longer* focusing on moments of dialectic (MELD; as in Table 3) but on the *depth* to which an initially used TF is extended.

In the naming of the TF, e.g., TF# 8, this greater depth is *not* indicated. Rather, it *becomes manifest* in more explicit TFs *that follow* the initially used TF further down in the “compact” Table 5 column (class of TFs).

Thus, we “go into *depth*” as we descend *down the column* of the table, a movement that, in cognitive assessment by interview, is systemically evaluated.

Here as above, a good way to read *the compact Table 5 as a living entity* is to see it as a map for *thinking* about a subject matter “X” in 28 different ways, depending on the thought form *class* chosen (CPRT) and *the aspect within it* that attention is presently focused on.

As said above, the table is also *a map for listening* and for *inferring* thought forms appearing in texts (Frischherz 2013 a/b).

Summary: CPRT Depth 12 TFs (4 pointing, 4 elaborating, 4 linking = 12)

<i>Depth</i> ↓	<i>C</i>	<i>P</i>	<i>R</i>	<i>T</i>
<i>p</i>	8	2	16	22
<i>e</i>	12	4	19	24
<i>l</i>	14	7	20	25-26

On further reflection, the seemingly only quantitative expansion of the *short* Table 4 into the *compact* Table 5 constitutes a qualitative modification. It makes it clear that there are two kinds of *deepening* of dialectical thinking that can occur:

1. The first kind of *deepening* refers to a *moment* of dialectic (e.g., 1M) or an entire *class* of thought forms (e.g., C=Context), and results in a progression exemplified in the short Table 4: *Cp→Ce→Cl*.
2. The second kind of *deepening* refers to individual thought forms (*within* a class of TFs), and is exemplified in the compact Table 5 by the progression, e.g., from TF8 to TF14 (Context), and from there to other *classes* of TFs (P,R,T).

Let me explain this further.

As we move downward in a column or *class* of thought forms, e.g., from TF#8 to TF#14 in the compact Table 5, we increasingly refine TF#8 in its scope and meaning until we arrive at TF#14.

Only *together* do (all) the *Context* thought forms TFs #8 to #14 spell out the dialectical meaning of “Context” relative to a specific subject matter, and similarly for the other *classes* of thought forms (P: TF#1-7; R: TF#15-21; T: TF #22-28). In short, the TFs comprised by a column *together* unfold a single moment of dialectic.

For example, by moving from “contextualization of parts within a whole” (Table 5, TF#8) to “multiplicity of contexts” (TF#14):

What was *originally only “pointed to”*—namely that “a whole is composed of parts”—is increasingly *elaborated* by moving to consecutive thought forms such as TF#9, TF#10, TF#11, TF#12, TF#13, until reaching TF#14 which affords the *broadest and deepest* picture of a subject matter “X” thought about in terms of *context* (1M).

What is more, when a thinker is able to see that for some “X” there exist *multiple contexts*, not just one, s(he) has already reached the boundary between Context and Relationship! This is so because speaking of *multiple contexts* (as in TF#14) naturally leads to the *assertion* that there is a *limit of separation between one context and another* (TF#15).

In terms of expanding the scope of a thought, this means that s(he) can now explore what relationships exist between the contexts s(he) is focusing on. The focus of attention is now the Relationship class of TFs, and her/his former focus on Context has been superseded.

The movements-in-thought outlined above are not simply monological but rather dialogical.

They capture the unceasing *give and take* of a true conversation in real time. In such a process, thought forms brought forward by one participant will be taken up and expanded, critiqued, and re-formulated by co-participants or members of a team. As a result, dialog between individuals can be charted as a set of movements through the map represented by either the short or the compact table of thought forms, aligned with a commensurate listening process.

When we think of dialog in real time as structured by thought forms, both Tables 4 and 5 appear as a two-dimensional abstraction from a living process.

However, viewed as maps of thinking and listening, the tables make visible the movements-in-thought of the *thinking ego*, whether in the medium of speech or writing.

Constellations

Actually, there exists a third way of deepening dialectical thinking. It has to do with forming *constellations* of thought forms, a process that occurs naturally but can also be engaged in systematically if the goal is depth of thinking about a particular subject matter in light of a particular goal to be reached or a decision to be made.

The important aspect in this deepening is *no longer* quantitative (adding thought forms), but is qualitative.

It pertains to the fact that when thought forms are used in real time, even a single thinker *moves closer to an understanding of a thought object X only by assembling thought forms into constellations*.

Given the world’s complexity, thought object X does *not* yield its secrets to a thinker until s(he) uses a *constellation* of thought forms all of which together make X *transparent*.

Without explicating the four moments of dialectic as they appear through the four classes of thought forms (CPRT) a thought remains stillborn.

On the Nature of Thought Form Constellations

It is important at this point to *distinguish* thought forms (TFs) from concepts.

While *concepts* refer to thought objects, thought forms refer to larger wholes such as situations, events, dimensions, totalities, global rhythms, etc.

Although a thought form (TF) can be seen as a “base concept” of higher order, its *flexibility stems from the fact that it can be expressed by way of many different concepts*, depending on the thinker, his/her topic, and the social context.

For instance, TF#1 “unceasing change,” will elicit different concepts from different thinkers, and can therefore itself be seen as a virtual constellation of concepts a thinker might choose.

However, a more apt way of understanding the use of TFs is that they “naturally” form constellations among themselves since they are only moments of a dynamic system.

To understand this better we can follow Th. W. Adorno (1999, 162) who writes about concepts what we need to say about TFs here, keeping in mind that every TF can be actualized in speech and writing by way of potentially quite different concepts:

“Concepts enter into *constellations*. The constellation illuminates the specific side of the object [or situation, event ...] which to a classifying [logical] procedure is either a matter of indifference or a burden... .

The model for this is the *conduct of language*.

It does not define concepts; [rather] *it lends objectivity to concepts [TFs] by the relation into which it puts the concepts [TFs] centered around a thing [topic]... .*

By gathering around the object of cognition, the concepts [TFs] potentially determine the object’s interior [i.e., its nature or essential meaning].”

The crucial idea that Adorno brings forward here is that concepts as well as TFs *never mean anything in isolation* but form networks (sets of nodes), and also that TFs need and call for each other to make sense. There is no “house” without a “roof” or “window” and “door”.

Just as little as we can isolate concepts and “define” them can we isolate and freeze TFs. And since TFs derive from the four *moments* of dialectic (1M, 2E, 3L, 4D), TFs need to be seen in conjunction with and interaction with each other.

Using TFs of a single *class* such as C or R *is a handicap* right away.

In light of the *p,e,I* sequence of thought expansion and deepening, restricting oneself to a single dimension of dialectic *is not* deep thinking.

Proceeding to *elaboration (e)* is natural, and can be done both by staying in the same class or by moving to a different class of thought forms.

Ultimately, elaboration yields to *linking (“l”)* by which thought forms get coordinated into constellations.

When that happens, TFs “gather around the object of cognition to determine the thought object’s interior, or “meaning”, as Adorno puts it, above.

How thought *constellations* are formed is a function of the *level of cognitive development* of a thinker. Even at the same level of development, such as “phase 2” of dialectical thinking (Fluidity Index < 30; Fig. 2), the way different people “think” will be different from one to the other, and not only because they are guided by different kinds of self-interest.

For instance, a person may think about a topic [*concept*] such as a “circular economy” in terms of TF#s P7, C10, R16, and T23, while a second person might choose TF#s P4, C9, R18, and T22 to think about it.

But *even if* two individuals choose *identical* TFs, one would still differ from the other by the *emphasis* given to each TF within the constellation, such that the weight – degree of articulation – with which the TFs are expressed will differ between any two thinkers.

As a result, different constellations comprising TF#s P7, C10, R16, and T23, for instance, would slightly differ among each other, and so would the insight into the object or situation obtained by employing them.

“Constellation” is thus an abstraction.

Differently weighted TF constellations are *unique and idiosyncratic* ways of expressing one’s thinking about a subject matter that *differ in the level of complexity of the thinking* that is accomplished.

Following the proposed example, the important aspects that would emerge in the first constellation (TF#s P7, C10, R16, T23, Table 5) can be circumscribed as follows:

- TF#7: [*Embedding in process, movement*]
Any economy is *embedded* in an ecological niche which itself is *embedded* in a cosmology; therefore, when we forget about the economy’s link to what surrounds it but is *inherently connected to it*, we may well fail to reach the purposes we have for a particular economy.
- TF# 10: [*(Description of) structures, functions, layers, strata of a system*]
The economy comprises distinct layers, some biological, others technological or political, and these layers interrelate, perhaps even intertwine. The economy is no flatland and is composed of potentially incompatible components that interact, one *absenting – conflicting with, disrupting or impairing -- the other*.
- TF#16: [*Value of bringing into relationship*]
[which includes valuation, thus transcends facts]: There is value in bringing into relationship those pieces of the economy that compete for effectiveness, in a way that is constantly changing; they need to be seen as *elements of a larger whole sharing a common ground, potentially of opposites*.
- TF#23: [*Value of conflict leading in a developmental direction*]
Different aspects of the economy are apt to come into conflict with each other, and while this conflict may be disruptive or even destructive, it may also turn out to *drive cohesion within the economy further*, thus leading to overall development that would be impossible otherwise.

Depending on what is the level of articulation given to each TF by two different thinkers’, we would have before us two significantly different ways of grasping and acting within a circular economy.

For example:

Constellation A	Constellation B
TF#7 [P] = 20%	TF#7 [P] = 30%
TF#10 [C] = 65%	TF#10 [C] = 25%;
TF#16 [R] = 15%	TF#16 [R] = 25%
TF# 23 [T] = 0%	TF#23 [T] = 20%

Table 6: Example of two TF constellations comprising identical but differently used thought forms

Using the same TFs, the two thinkers would be insightful about a circular economy to different degrees. Considering that the *ideal outcome* would a *balance* of TFs *in all four classes* of thought forms, thinker B would have a more balanced view of the matter but at the price of lacking a more detailed contextual understanding compared to thinker A.

Thinker A

The first thinker is *stuck in Context TFs* (TF#10=65%) thus *unable to see* a circular economy as anything more than an abstract design one can describe in great detail.

This “logical” thinker would see a circular economy quite *unrealistically* since s(he) has *not even begun to use* TFs of class *Transformation*, and would thus be *unable to appreciate* the limited durability and harmony of complex systems, nor could s(he) appreciate the force of conflicts in the economy as a driving force of its constant reshaping of itself (TF#23=0%).

Although s(he) would to some modest degree be able to see the impact of the economy on its social and physical environment (TF#P7=20%) and could perhaps even arrive at a fairly apt appreciation of how the many pieces of the economy form a larger whole (TF#R16=15%), overall her/his notion of “circular economy” would be more of a textbook concept rather than a structurally deep one.

S(he) would therefore be a *poor change agent* or *sponsor of change* and *remain befuddled* regarding what is actually happening in such an economy.

Thinker B

Thinker B’s cognitive profile is characterized by *relinquishing the predominance of Context* TFs (thus of logical thinking) which reduces a circular economy to a textbook abstraction.

S(he) shows a remarkable *balance between thought form uses* in all four classes (CPRT) that leads him to begin appreciating the economy’s complexity, risks for instability, and available potential to remediate tensions in the economy by *making use of* conflicts and inequalities that appear.

Thinker B could demonstrate, for example, that’s(he) has *parted with the illusion* that a multitude of *algorithms based on formal logic*, engaged in the analysis of massive quantities of data, will solve all the problems the economy poses (nevertheless appreciating what algorithms on their own might be able to accomplish).

If s(he) can proceed from TF# R16 to TF# R18 or TF# R19; Table 5),
 s(he) could even begin to understand how a *constellation* of algorithms,
 one of which is failing, might be able to compensate for this failure
 since together the algorithms form a *transformational* unit,
 or *constellation*, that is to some extent self- repairing.

As the two examples demonstrate, it is ultimately constellations of TFs that centrally matter
 when we talk about “*comprehending the real world through dialectic*”.

The complexity of such constellations is a matter of how TFs are elaborated, linked, and
 coordinated *in real time*, whether in speech or in writing text.

The Relationship of Scope to Depth of Thinking

We have seen that *regardless of* whether a thinker uses 28 or 12 TFs,
 s(he) formulates *constellations* of TFs by which the concepts used to articulate TFs
 come to “surround” an object of thought so that its alethic truth is illuminated.

At the same time, thinking *sheds its logical constraints* and become “untrammelled”.

This is an outcome no single TF can produce,
 even less a single concept articulating a TF.
 It is only an entire constellation of TFs in their elaborated and linked form
 that can shed light on objects of thought referencing the reality we are aiming for.

Since dialog generates potentially very complex TF-constellations, it is often advisable to
 restrict the scope of a discourse for the purpose of deepening the thinking about the subject
 matter under scrutiny.

Breadth and depth of thinking do not easily go together,
and while logical thinking proceeds "breadth first",
dialectical thinking proceeds "depth first".
 (This explains why they urgently need each other.)

To permit thinking to be "depth first" is the purpose of the *Three Houses* in DTF, shown
 below, which facilitate an understanding of how people (when interviewed in real time)
construct their workplace.

(Adaptations of the Houses to other task domains such as private life can easily be made.)

The Houses follow a “divide and conquer” strategy,
 initiating a discourse in the **Task House** where tasks and goals are central,
 moving on to the **Organizational House** where four perspectives on corporate culture
 are discussed,
 to end up in the **Self House** where the interviewee focuses on his or her *professional self-*
development into the future.

Figure 10 below sets out the various “floors” in each “house”.

The Three Houses of Work

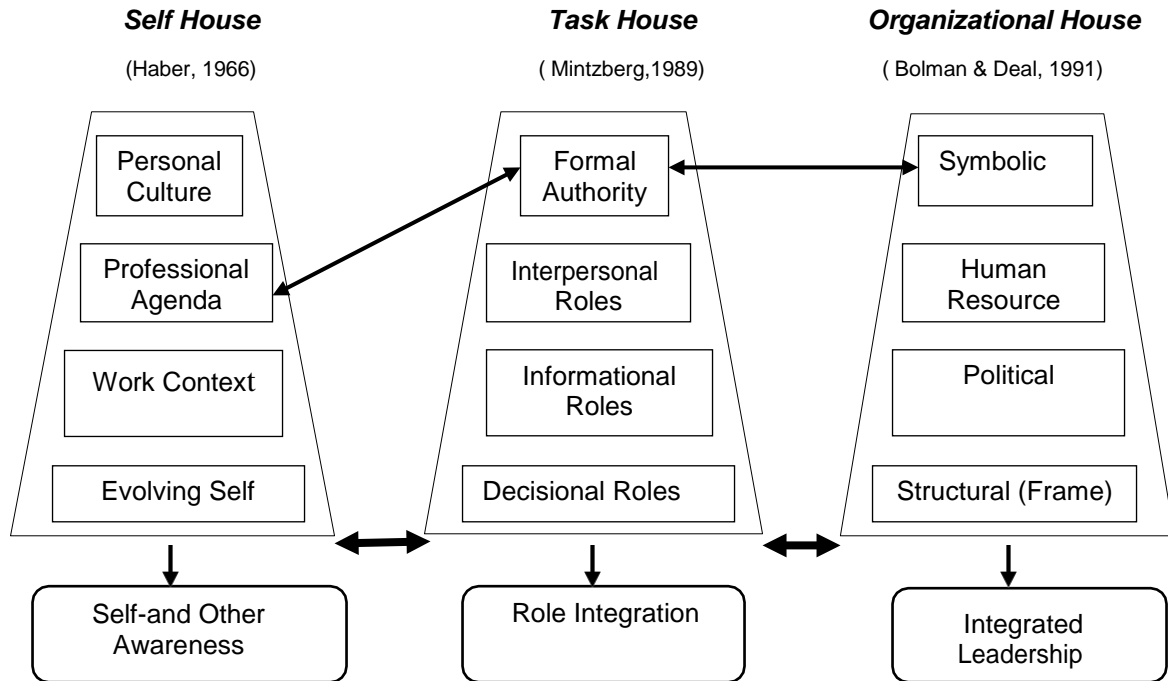


Fig. 10: Three Houses of Work (Laske 2008)

Cognitive Interviewing

It is important to understand that the Houses are no more than a *template* for having a **dialog** about an interlocutor's *internal workplace* (the workplace as *internally constructed*).

They are *not prescribing* what to speak about, nor how, nor is there a need to focus the dialog comprehensively on all 4 “floors” of each of the Houses.

Rather, the goal is *depth, not breadth*, of dialog so that dialectical thought forms can *emerge* or, to put it differently, so that *thought is empowered to move beyond p* (pointing to) to *e* (elaborating) and *I* (linking and coordinating to create constellations.)

Assume now that there unfolds a dialog of half or one hour about the three aspects (Houses) of a person's *internal workplace*.

We can “record” the *movements-in-thought* of the interlocutor's *thinking ego* by listening to his or her speech from a perspective of what TFs are used by her.

The picture that emerges might look like Fig. 11, below:

Cognitive Behavior Graph

Utterances	Process (P)	Context (C)	Relation - ship (R)	Transform - ational System (T)	P TF#1-7	C TF#8-14	R TF#15-21	T TF#22-28
	<i>Thought Forms #s</i>				<i>Graph</i>			
1	6				•			
2				22				•
3	(5)	(9), 14	15		•	•	•	
4			20	22, (24)			•	•
5	5			22, 27	•			•
6			19	25			•	•
7				22				•
8		14				•		
9		8	19, 20			•	•	
10	5			26 ,27	•			•
11				28				•
Separate TFs	2	3	3	6	←See Table 10.3 for weighting			

Fig. 11: Manager C's Cognitive Behavior Graph (a Constellation of Thought Forms)
(Courtesy A. Snow)

When we scrutinize the movements-in-thought shown in Fig. 11, we detect particular constellations of TFs by which the interviewee *attempted to comprehend and explicate* a particular topic chosen by him.

These constellations differ between the three Houses in terms of complexity, which could *indicate an imbalance* of the individual's thinking about different dimensions of his/her workplace.

Given a map of such constellations emerging over time, we can then determine the interviewee's *present* "cognitive profile" in terms of the fluidity and depth of dialectical thinking measured in terms of four classes of TFs.

Consequently, we can also give feedback to the interviewee about his/her present thinking and can put in place appropriate cognitive coaching interventions for the sake of *remediation and training*.

Or else we can make a recruitment decision, selecting the most cognitively advanced applicant for a particular job.

In a professionally conducted cognitive interview based on DTF another aspect of TFs comes to the fore, namely that individual TFs function as “*mind openers*” for both parties to the dialog.

While the interviewer, recognizing a TF used by the interviewee, can reinforce that TF as well as guide the interviewee to a different, *related TF* or a different *class* of TFs, the interviewee receiving such (implicit or explicit) feedback can begin to understand in greater depth “*how s(he) is actually thinking*”, and in what way s(he) might be able to think in a *more complex and fluid way*.

Responding to another person’s thinking based on DTF then becomes (cognitive) “mentoring”.

On the Risk of *Sabotaging* Dialectical Thinking

Laying bare the thought form structure of thinking in real time produces insight into *fallacies of thought* that end up sabotaging thinking efforts.

By *sabotaging* dialectical thinking I mean *using dialectical thought forms in a purely formal-logical or systems-thinking manner*, even while relating them to each other. After all, *dialectical TFs* all focus on a particular content as other concepts do and seem to lend themselves well to differentiating one concept from another, which indeed is a *requirement of dialectical thinking* but is also what formal logical thinkers primarily look for.

1. By turning a thought form such as TF#1 into a *content*, one can easily argue about “unceasing change” in a *purely logical manner*, assigning examples or “solutions” to it, *without ever going into any depth* about what the TF dialectically stands for, namely an element of negativity or absence to be spotted in either physical or social reality, or both.
2. A similar issue arises when the Dialectical Thought Form Framework (DTF) is used for *cognitive assessment* by way of interview. An *inexperienced* interviewer or assessor *who does not* grasp the intrinsic interrelationship of classes of thought forms and of their members, in my experience tends to treat TFs as purely logical concepts, and also evaluates interviews entirely based on their *content*, thereby arriving at a *false* cognitive profile of an interlocutor.
3. A third way of sabotaging dialectical thinking, in my experience, is to give particular TFs specific meanings. For instance, one could assign to TF#1 a label like “emergent change”, and then proceed blithely to centering the thinking that follows on the contents of what one takes to be the meaning of emergent change in a particular environment, for instance, in organizations.

What can be done about this kind of sabotage? Actually very little - except for waiting for *cognitive adult development* to happen in the TF user.

Thought Form Features

Since, on their way of becoming experts of dialectical thinking, *beginners* increasingly grasp their limitations in using TFs, there is hope that with practice and increasing cognitive maturity, the following peculiar features of TFs may begin to be seen:

- a. All TFs are essentially “mind openers” and all uses which *do not* contribute to that function turn TFs into *purely logical fakes*.
- b. All TFs embody the essence of “*absence*” or “negativity” which makes any kind of hypostasis – *of labeling TFs as having a particular content* – a sure sign that a particular TF is being misused.
- c. All TFs are only “half-thoughts” relative to the TFs they are intrinsically related **to** *as a function of a particular individual’s movements-in-thought*.
- d. All TFs are only “*moments*”, just as the moments of dialectic they represent in the mind, and therefore *can never be “pinned down” to have a specific content meaning*.
- e. As the thinking ego itself, TFs are, to speak with Ahrendt (1971, 167), “slippery fellows” that shy away from direct appearance. (Their appearance in Concept Behavior Graphs only gives the *illusion* that, once named, they can be taken prisoners.)
- f. All TFs are midwives of deep thinking which pass out and *die when they come to a formal-logical fence*, having their light extinguished.

One thing is clear: wherever “dialectic” has become an ideology of whatever kind, it has given up its spirit! In this sense, its appearance is its death.

On the Risk of Sabotaging Logical Thinking

There exists today an equally large risk, that of sabotaging logical thinking, a priceless *developmental achievement of early adulthood* that counteracts ego-centrism.

As a summary of beginning research on effects of new technologies shows (Greenfield 2015), *social networking and other* -- by nature solipsistic -- *uses of the internet* seem to be causally involved in bringing about an under-nourishment of the pre-frontal cortex *where personal identity, moral judgment and conceptual resources reside* (Greenfield, 96-150). This development reduces both potentials of logical thinking and resources that enable the progression *from logical to systems thinking to dialectical thinking* to occur.

In light of this treatise on how to facilitate making Hegel’s “effort of the concept”, the question arises whether teaching dialectical thought forms could become a tool of choice for *rescuing logical thinking from staying immature for life* as a side effect of social networking and other solipsistic uses of the internet.

My hypothesis is that this is a strong possibility, for the following reasons:

- While it is generally *assumed* that learning to focus on, and separate, concepts (i.e., logical thinking) is a *precondition* for developing dialectical thinking, *experiencing dialectical*—that is, *holistic, systemic, and transformational*—thinking also *challenges, and thus nourishes, logical thinking* (as happens in DTF interviews).

- This is the case because the human mind is ***not** innately logical* but has *intuitive resources dating from childhood* that are closer to holistic than to logical thinking (Stern 1985).
- After all, a “thought form” like *unceasing change* (P), perceived by an infant intuitively and perceptually, invites working from the broader, intuitive circumference of the notion of change to envisioning and differentiating types and kinds of change, thus forcing not only the identification and recognition of potentially “logical” conceptual elements, but also their *synthesis*.

Logical thinking cannot provide such a synthesis,

so that one might view dialectical thinking as the mature form of what infants, embedded in common sense, naturally intuit.

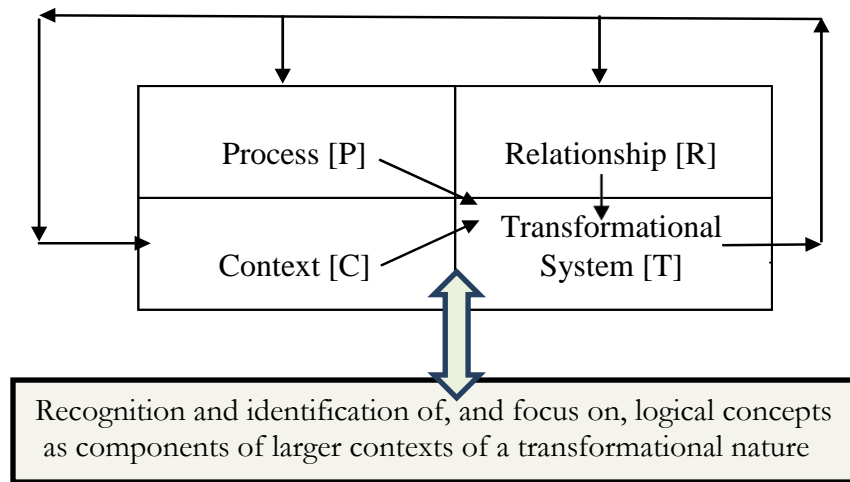


Fig. 12: Use of Dialectical Thinking Resources for Strengthening Logical Thinking

In short, the progression from logical to dialectical thinking is not a one-way street, but involves an integral transformation of the entire human Inquiring System.

One can therefore work in teaching both *from* logical *to* dialectical, and *from* dialectical *to* logical (thinking).

A promising pointer to this possibility is the teaching of dialectical thinking to children undertaken in Russia (Belolutskaya 2015; Veraksa 2013).

Part III: Teaching Programs for, and Applications of, Dialogical Dialectic

How to Develop a Teaching Program for Dialectical Thinking

Teaching dialectical thinking in a world dominated by logical thinking is a task of tall order. There is apparently no place for such thinking in a world governed by algorithms and formal-logical models.

At the same time, re-vitalizing dialectical thinking is of great value just because it provides a broadening of perspectives, not only for professionals but for living one's life.

It is, after all, an attempt to think *at the level of living systems*, not beneath that level where society conducts most of its business.

While logical thinking *is a crucial tool of dialectic*, taken for granted and *by itself it has severe limitations from the perspective of the gap between "how reality works" and "the way people think"*.

In fact, the gap derives from nothing but logical thinking itself, and is rooted in the fact that *such thinking is neither holistic nor systemic*

in the sense of the transformational nature of reality that begs to be understood.

For some time now, I have undertaken the effort of teaching dialectic to professionals, a "liberal arts" venture in the form of "cognitive" or "philosophical" coaching focused on recognizing *structures of thinking* in professional dialog.

I have experienced professionals' difficulty in undoing the dominance of logic in their way of *constructing the world for themselves*.

This difficulty is to be expected since the social world is no less complex than the physical world although it outwardly gives the *misleading impression* of being structured in logical terms,

due to being a totally "administered world" (as Adorno and Marcuse would have said).

Teaching Dialectical Thinking – 5 Aspects

At the end of this treatise on *dialogical dialectic*, I want to pass on my experience of teaching dialectical thinking, not only to individuals but, directly and indirectly, to organizations and institutions. I do so below, under the following headings:

- A.** Raising awareness about the limitations of purely logical thinking
- B.** Establishing a theoretical and practical framework for teaching dialectical thinking
- C.** Developing teaching materials: teaching as dialog
- D.** Mentoring professionals by way of case studies
- E.** Guidelines for certification of dialectical thinking capability

A. Raising Awareness about the Limitations of Purely Logical Thinking

Raising awareness about alternative ways of thinking means conveying the following critical insights:

- “What” people think about *derives from* “how” they think, or the thought form constellations that structure their thinking.
- These constellations are part of an Inquiring System that the thinker *is unaware of*.
- A logical Inquiring System is focused exclusively on “what is the case” or *actuality*, and tends to screen out “what is real”, in the sense of the four moments of dialectic.
- Every individual’s Inquiring System is, however, *in developmental motion* and comprises resources *by which to move to* systems thinking and dialectical thinking.
- At any point in time, an Inquiring System can be assessed through DTF in terms of *fluidity of thought form use* as made visible by a Concept Behavior Graph (Fig. 11).

The task of *disrupting* the automatic logical and downloading mentality of conventional thinking can be undertaken in two essentially different ways:

first, through one-on-one mentoring by an expert in dialectical thinking, and
second, in a team context, where an actual motivating issue or concept is brought forward, dissected, and put together in a new form based on facilitation using dialectical thought forms.

B. Establishing a Theoretical and Practical Framework for Teaching Dialectical Thinking

Framework Used

In order to teach dialectical thinking, a theoretical framework associated with practical tools is needed. Such a framework emerged for me around the year 2000 when I began to combine three previously separate assessment tools

https://en.wikipedia.org/wiki/constructive_developmental_framework

- A tool for measuring the level of **meaning making** (*social-emotional maturity*) in the sense of R. Kegan (1982; Lahey et al. 1988)
- A tool for measuring the phase of **dialectical thinking** (*cognitive maturity*) based on M. Basseches’ work (1984)
- A tool for measuring a person’s **psychological profile** in the sense of the theory of personality created by Henry Murray, and referred to as “Need/Press”, by his student Morris Aderman (Hawkins 1970).

Since dialectical thinking is an adult developmental achievement *potentially attainable* by all, its embedding in a broad profile as provided by CDF has successfully hindered me from thinking of an individual’s cognitive profile as a stand-alone capability.

It seemed clear to me from the start that *de-totalizing* human capability into isolated or logically related “competences” would be a grave error to make.

Hypothesis regarding the growth of dialectical thinking

Based on my teaching and assessment experience, I would formulate these hypotheses:

- Social-emotional *and* cognitive development go hand in hand in that the first defines an individual’s Stance vis-a-vis the social world,

and the latter provides tools for understanding both the physical and social worlds (thus being much broader).

- The individual's psychological profile (in the sense of Murray who operationalized Freud)) is largely established in childhood except that adult development assists an individual in learning "*how to live with who I am*", thereby potentially smoothing the hard edges of the profile.
- Both the social-emotional and psychological profile can potentially delay or block the development of an individual's cognition which, however, can be alleviated by *scaffolding*, working with the concept of "zones of proximal development" (Vygotsky 1978).
- However, *cognitive development* exerts a determining influence on *social-emotional development*, thereby enhancing overall developmental potential and minimizing psychological vicissitudes.

It is evident that the complexities here indicated lead one naturally to thinking about personality and individual development in a dialectical manner. *Logical shortcuts fail.*

This is exactly what is lacking in most "helping professions", most of which work from *models that de-totalize their clients* to proportions their purely logical tools can deal with.

Teaching Procedure

Although I never entirely forget the social-emotional and psychological co-determinants of complex thinking, in teaching dialectical thinking I am typically restricting myself to DTF, the Dialectical Thought Form Framework sketched in this introduction.

As a consequence, the theoretical framework in the narrower sense here in focus -is one that conceives of:

the development and acquisition of dialectical thinking *as a natural birthright* of individuals *who are in a situation of "proximal development"* where they need help *for giving themselves permission to think*, that is, to construct the real world in more complex than logical ways.

Once people realize that after their middle twenties, when logical thinking has matured in most of them, they are on a *developmental journey* to increasingly *complex thinking*, they begin to become curious about where along the trajectory of acquiring dialectical thinking they presently find themselves.

I have tried to convey that trajectory in this introduction by introducing the reader to motivational pillars of teaching DTF, such as notions of *the mind's UDR movement*, *the feedback loop involved in making experiences* (**Fig. 7**), and the examples given for how TF configurations differ between more or less complexly thinking individuals.

I well realize that these motivational niceties are not always welcome, especially in organizational contexts and in teams where the issue is "to get things done".

In those circumstances, when I have to forgo any kind of philosophical help,

I typically focus on how to increase collaborative intelligence in teams
or *holacratic circles* by inviting team members to present a problem they are sitting with.

I then facilitate their exchanges by pointing to *absences* in their thinking –

which could usefully be done away with by using this or that *class* of dialectical TFs,
or this or that *individual* TF, following the *pel* sequence in the short and compact tables of
thought forms (Table 4 [*pel* TFs], Table 5 [CPRT 28 TFs]).

Two different teaching modalities

There are, in my experience, two different modalities of teaching dialectical thinking:

- The long and deep way
- The short and shallow way.

Which one to choose depends on the *context* in which the teaching occurs, and the financial
means available for acquiring dialectical thinking.

The long and deep way

This approach to learning dialectical thinking is time-intensive. I call it the *Case Study Method*
when working with an individual mentee, and the *Case Study Cohort Method* when working
with a group of students.

We have seen that *deep-thinking dialog is accurately modeled by engaging in cognitive interviews*
in which it is the task of the *interviewer to lead* an interviewee
to the limits of the interviewee's present ability to think.

Individuals can be encouraged to learn semi-structured cognitive interviewing that provides
them with opportunities to *acquire dialectical thought forms*
by way of listening to others in interviews.

This involves recording and transcribing, and then systematically evaluating how an
interlocutor has been *thinking* during a 1-hour interview conducted by a DTF expert.

The professional way to do such an interview is to use the ***Three Houses*** or a divide-and-
conquer strategy in order to generate *depth* rather than breadth of thinking.
Through interviewing and scoring *practice*, the learner will rapidly improve
his or her own command of using dialectical thought forms
in all communications previously based on purely logical thinking (Fig. 10).

Case Study Cohort Method:

In a virtual or actual workshop setting, this “royal road” approach is *even more effective* since an
entire cohort is set to work on the critical evaluation of one of its members' interviews.

In this way, *an entire group*, together with the instructor or by itself, *thinks together* about how to
correctly evaluate the *present phase* of a client's dialectical thinking
in terms of his or her use of thought forms,
thereby reinforcing cohort members' insights into what is a correct or incorrect evaluation of
text fragments (“bits”) selected from an interview.

Over time, *the critical listening experience* turns into an increasing facility *to use dialectical thought forms*
oneself in all of one's communications.

When the long and deep way is taken, the time required for mentoring based on

conducting a complete cognitive case study is at least 12 x 1-hour mentoring sessions: 2 for *teaching interviewing* in terms of DTF, and 10 for *supervising the evaluation* of a transcribed interview and for preparing written feedback to the interviewee.

Making two additional case studies, as required for DTF certification, will require 12 additional 1-hr mentoring sessions. A total of 36 hours [2+10=12, x3]

The short and shallow way

Where time or money are not available for following the royal road to dialectical thinking just described, the best compromise is to proceed by way of a succession of 2-day workshops following each other a month or two months apart. All workshops are team workshops focused on increasing collaborative intelligence, and are thus steeped in pragmatic subject matter.

(Collaborative intelligence in the sense of humans working with robots is now on the horizon but won't fare too well before humans have got their act together ...).

While the *first* workshop is introductory, *subsequent* workshops are “advanced” in that group or team members already have access to a memory bank about DTF.

In addition, the group's choosing of practical problems enhances the motivation to absorb dialectical thinking by way of listening to how team members think *and what are the absences in their thinking* that hinder the group/team from succeeding in effective collaboration (in addition to team members' Stance in the sense of Fig. 9).

In this context, the *effectiveness* of the training strongly *depends on* the level of *dialectical thinking of the instructors or mentors*, and their ability to motivate the team to think “differently”.

Effectiveness, however, is not meant in a purely technical sense, here.

Rather, it ultimately refers to the thoroughness of culture transformation achieved in the team's organizational environment.

Teaching dialectical thinking in an academic context

In an *academic (or even high-school)* version of the short and shallow approach, for instance at the *undergraduate level*, it is crucial to work pragmatically, on the basis of motivating problems and issues participants bring to their learning.

The instructor best structures classes by *dividing the DTF subject matter* into an introductory and several advanced modules including individual and/or group mentoring, following the Exercise Grid in Table 7 below.

For instance, each of the four moments of dialectic, or classes of dialectical thought forms can be taught in four introductory modules terminating in an exam that comprises a short interview-based case study.

The study challenges the student to *transcribe his/ her own interview*, perhaps of 20 minutes length, select relevant interview fragments for evaluation, and evaluate them in terms of the appropriate TFs (Tables 4 and 5).

Subsequent “advanced” modules should increase either interviewing or scoring requirements, or both, until a reasonable level of independent work on short case studies (interview transcripts) can be expected from students.

C. Developing Teaching Materials: Teaching as Dialog

Pedagogical Requirements.

Teaching materials must satisfy the following requirements; they must:

- a. Motivate the learner to view his/her own thinking as a *work in progress*, in terms of acquiring a more complex Inquiring System (Fig. 7 in addition to Fig. 2.)
- b. Give the learner a notion of the progression from formal logical to systems to dialectical thinking in adulthood (Fig. 1; E.g., by introducing systems thinking tools such as found at <http://www.iseesystems.com/store/products/stella-professional.aspx>)
- c. Provide the learner with evidence of the limitations of logical thinking with regard to issues such as *change, transformation, holism, and the understanding of organic wholes* (e.g., by way of examples, such as a beehive, one's own body, etc.)
- d. Present the learner with interview or other text fragments ("bits") from a comparison of which emerges an understanding of the difference in people between different levels of complexity of thinking (*in DTF "the four managers" all of whom are thinking about the same organizational situation but at different levels of thought complexity*)
- e. Link text fragments with either the *short* (Table 4: 12 TFs) or the *compact* table of thought forms (Table 5: 28 TFs) so that s(he) can begin to analyze text in terms of
 - i) the four classes of thought forms, and
 - ii) individual thought forms in these classes.

Practice Suggestion

Dialectical thinking is "meta-thinking",

or

Thinking about the structure of one's own thinking *and that of others (collaborators)*.

Such a discipline is presently not taught but could produce large benefits in practically any professional environment, beginning in high school.

A pragmatic program comprising four successively more complex steps in learning to think dialectically was first proposed by N. Shannon and B. Frischherz in their 2016 ESRAD presentation "Training in dialectical thinking to support adult development".

It is shown below in Table 7 in a slightly expanded form.

Progressive Exercises for Meta-Thinking

<i>Action</i> → <i>Approach</i> ↓	Identify [others' TFs]	Reflect [on own TFs]	Use [in speech and/or texts]
Simple (4 TF classes <i>CPRT</i>)	<i>Analyze/classify</i> pictures/texts	<i>Reflect</i> on a problem	<i>Ask</i> questions, describe and illuminate
Medium (12 TFS <i>p,e,l</i>)	<i>Compare</i> texts [on same topic]	<i>Reflect</i> on a personal goal	<i>Rethink</i> a problem
Complex (28 TFs)	<i>Analyze</i> a structured interview	<i>Reflect</i> on values; <i>evaluate</i>	<i>Coach</i> a process
Expert	<i>Analyze</i> the TF structure of speech flow in real time	<i>Reflect</i> on TF constellations heard or self-formulated in real time	<i>Model</i> TF constellations for others in real time

Table 7: Teaching Program for Meta-Thinking
(adapted from Shannon & Frischherz 2016)

Table 7 shows the steps from beginner to expert. The idea underlying it is simple:

Before understanding, and being able to recognize the four *classes* of thought forms as they derive from the four *moments of dialectic*, individual TFs make little sense to learners. This is so since individual TFs have their root in the four *moments* of dialectic.

Making a distinction between simple, medium, and complex “abilities”, the table further details the cognitive processes required of the learner:
identify, reflect, use (in speech or text).

Each of these takes on a different meaning depending on whether the exercise is simple, medium, or complex. While understanding the *differences* between the four *classes* is relatively simple since it involves logical understanding,
tasks of medium complexity – compare texts, reflect on a topic, rethink a problem – are more difficult.

However, when restricting oneself to 12 TFs, these tasks are manageable if sufficient time is devoted to them.

Once classes of TFs have been understood and have been exercised in medium-difficulty tasks, more complex tasks can be undertaken.

Complex Tasks

These complex tasks deserve some comment.

- *Analyze* a structured interview:

While a DTF expert is able to analyze a structured interview by listening, even a fairly

experienced dialectical thinker will need to work from a transcript of the interview. The task comprises the following aspects:

- Select those interview fragments (“bits”) that are unified based on a *cogent base concept* whose implications they unfold.
- First determine the class(es) of TFs involved in the interview fragment, *then* select a cogent TF within the class.

If more than a single TF apply, determine the relative weight (*degree of clarity*) of each, e.g., TF#10 [assessed as weight=1] & TF#18 [assessed as weight 2].
(Weighting TF use: operates between 1 and 3 maximally so that the highest weight per class of TFs, in the sense of Table 5, is $7 \times 3 = 21$, i.e., 7TFs x max weight 3 each).
Then justify your selection and weighting decision.

- For an entire interview, select 30 cogent text fragments, and use your evaluation outcome to formulate a “cognitive profile” of the interviewee in the form of a CBG as shown in Fig. 11 Cognitive Behavior Graph, above.
- Write a report meant to give feedback to the interviewee regarding his or her present *fluidity* in using TFs, following Table 5, above.

Once the analytical task just outlined has been accomplished, the experiences made *become the basis of a progression of the thinker to reflect- and use tasks*, each of which can be *simple, medium, or complex*.

Reflection tasks are concerned with self-reflection and are pursued *alone or in a group*, while *Use* tasks involve communication via speech or text.

As indicated, an expert has performed these tasks many times; their performance has become second nature for him/her and can therefore be effortlessly carried out in real time.

Given this outline of the components of a teaching program for meta-thinking, let us *reflect* on what is provided by this Introduction for defining a *context* in which the progressive learning steps indicated above can be carried out.

- a. This Introduction to the DTFM Manual delivers the theoretical framework for courses and workshops in dialectical thinking, whether in the organizational, educational, or academic domain.
- b. The DTFM Manual itself falls into 2 sections, the first presenting in depth each of the 28 thought forms (“A” above), while the second (“B” above) provides useful tables and tools for evaluating transcribed interviews (or book texts) for the sake of clients (including students).
Amongst the material in section B one finds tools for recognizing thought forms in speech and text, as well as an open (in-progress) list of questions deriving from each of the thought forms utilized as mind openers.
- c. Based on part A, the instructor can build teaching modules for learning each class of thought form (CPRT) and give examples for their use in professional discourse.
- d. Based on section B (scoring materials), the instructor can further scaffold the learning of

thought forms.

For instance, he can utilize the “Table of Questions about Thought Forms” in section B3 to give students an inkling of *what to listen for* in interviews and more unstructured conversations and discussions.

- e. Based on section B4 students can begin to learn to challenge interlocutors (and each other) to adopt more in-depth thinking than formal logic has to offer.

Based on section B4, the instructor can *lead students to reflect on* how - from a single TF - many different challenge questions can be developed, *either* for self-reflection *or* for prompting an interlocutor to “think more deeply”.

- f. The Cognitive Behavior Graph (CBG) in section B7 can be expanded into an introduction with an internet-based tool such as Stella Professional modeling software (https://www.youtube.com/watch?v=aq49WAoF_4g)

Based on that the instructor can help students get a better sense of “*how they presently think*” and explore the *limitations and errors of logical thinking*.

The technology used in Stella can be seen as a potential basis for developing on-line tools for spotting *dialectical fallacies* regarding each of the four moments of dialectic and understanding the mechanism of thought form coordination.)

D. Mentoring by way of Case Studies

By “*case study*” is meant the interviewing of a client followed by a systematic analysis of the associated cognitive interview *transcript* in terms of DTF.

The “compact” Table 5 of TFs is used to evaluate thought form *use* per class and the degree of *articulation* of TFs in each class for each of the Three Houses (Fig. 10).

Such an analysis results in a cognitive behavior graph (CBG; Fig. 11) which gives visual evidence of what TFs have been used in which of the Three Houses at what point in real time (Fig. 10).

Such a *case study* does more than deliver empirical data about an individual’s thinking.

What counts for the student is the *process* of working it out, that is, the *mental processes* that generate dialectic practice.

On the side of the **interviewer**,
the study trains dialectical listening.

This kind of *listening to the thought form structure* of a person *in real time* is the royal road to becoming a dialectical thinker,

- “royal” because there is no better way of absorbing thought forms than recognizing them in another person’s speech flow.

On the side of the **interviewee**,

the process provides ample opportunities for *reflecting* on his or her own thinking.

If correctly *prompted and challenged by the interviewer*

- say, by the question: “what would this look like if we considered this situation *as being in flux (or being about to change)*?”

- the interlocutor is forced out of his/her adherence to logical models (which don't even capture change) and has to find ways of dealing with transformation.

Through the medium of a *cognitive interview* the interviewer learns how **to** lead a conversation in which the interlocutor's concepts are closely followed and potentially challenged in terms of how *deeply* they engage in a topic (more than how *broad* the topic can be spread).

The interviewee is made aware that there are *28 different ways to think about a topic*, and that a particular thought form s(he) has *chosen* is only a paltry beginning of what could be discovered about the topic *they were thinking to move to constellations* of thought forms.

S(he) is also made aware that what is happening in a cognitive interview is *not* some description of the world *but its creation in real time through dialog*.

Therefore, the highest compliment an interlocutor could pay an interviewer would be to say: "Great thanks for this interview in which you have made me think about my topic(s) in a way I have never done before, or even known that I could conceive of it in the way you guided me to do!"

DTF Mentoring (Dialectical Thought Form Framework/Deep Thinking Framework)

DTF Mentoring equates to doing a case study at one step removed.

The mentor adopts the role of a professional interviewer throughout the mentoring process.

The mentoring process is nearly identical with "supervising a case study", where both parties to the mentoring work on behalf of a client (interviewee) as an outside party whose way of seeing the real world (as a function of his/her level of adult development) is the crucial topic in focus.

DTF mentoring comprises the following teaching subtasks:

- Introducing to the tools of DTF
- Explaining the nature and structure of a cognitive interview
- Modeling professional cognitive interviewing for the learner
- Explaining interactive dialectical listening (use of base concepts) in the *Three Houses*
- Critiquing the mentee's interviewing procedure based on the interview transcript
- Modeling the optimal selection of pertinent interview fragments to be analyzed
- Questioning the initial selection and evaluation of interview fragments
- Working toward a consensus with the mentee regarding the correct cognitive profile to give feedback on, as well as the way to do so
- Suggesting more potent interviewing and listening techniques than were initially employed.

Group Mentoring

In group mentoring, the same pedagogical processes apply but they are naturally potentiated by the collaboration of mentees among themselves and with the instructor.

This interaction creates mind-opening processes which could not happen in a

one-on-one encounter. The mentor “thinks along” with the entire group or team, and attends to its self-observations, questions, and doubts.

This process entails noting how much help individual mentees need compared to others, i.e., *the zone of proximal development* in which different individuals find themselves regarding their dialectical thinking.

In *circles*, the discovery of such differences can be crucial for the success of the circle.

The pedagogical processes listed above together form a comprehensive education program for both dialectical listening and thinking.

Overall, they clarify the nature of the four *moments of dialectic* and their associated thought forms, as well as their function in deep-thinking dialog.

In an important sense **listening** in terms of the four moments of dialectic is always *the most important capability* to be schooled in teaching dialectical thinking

- which is the reason why it cannot be learned from books.

It can only be learned from an expert in DTF.

The requirements for **teaching** dialectical thinking are equally rigorous.

In my experience, only an experienced dialectical thinker (that is, an “expert” in the sense of using Table 7) can be expected to function as a mentor.

E. Guidelines for Certification of Dialectical Thinking Capability

As is easily imagined from material presented in this introduction, an individual’s *present phase* of dialectical thinking can be certified at different levels of competency.

The determining factor is the extent to which the candidate can listen dialectically in terms of Table 5 (28 Dialectical TFs), and his/her ability of self-reflection.

In all cases experience would recommend using case study material to arrive a certification decision.

For instance, as Director of Education at IDM I created two different certifications for dialectical thinking:

1. *The Developmental Coach/Consultant certification* based on evaluating a single case study.
2. *The Master Developmental Coach/Consultant certification* based on evaluating three case studies.

The difference between capabilities so certified is palpable and easily seen.

A person certified in case (1)

shows *inconsistent capability* of conducting as well as evaluating semi-structured interviews, and as a group facilitator is *often unsure* about what s(he) heard from others in terms of thought forms.

A person certified in case (2)

is not a perfect DTF expert either but is *more professional* in both interviewing for the case study as well as its evaluation and feedback.

Wherever *not simply assessment* but *mind-opening* capability through dialog is the purpose of

certification, learning DTF assessment remains the first best step.

Whoever *cannot listen to speech in terms of thought forms* (as required in an interview) is unlikely to have a sure command of thought forms that structure his/her own thinking or others' dialog, for that matter.

The reason for this is simple: identifying and using thought forms is not an exercise of “pure thinking”

but has a strong somatic base in one's own acoustic and emotional experience.

One has to have experienced “*what dialectical thinking sounds like*” to be able to exercise it as well as guide its development in others.

Meta-Thinking Consultations (Philosophical Coaching)

It will be evident by now that, of the many kinds of dialog in the world, those aiming to shed light on *the structure of thinking* of interlocutors,

whether paired or in teams, in real time, are a special breed.

Today, such dialogs – or meta-dialogs -- are more needed than ever.

After all, we live in a world of great *complexity co-created by our discourse* through which social reality has itself become “conceptual” (Bhaskar 1993), and therefore is in need, not only of “clear communication” but rather of *deep thinking*.

It is for this reason that the Manual here introduced is very timely, and of great use for leaders, managers, entrepreneurs, consultants, and coaches, not to speak of politicians and philosophers (Stewart 2016; Laske 2015).

It will also be evident that connecting Bhaskar's *four moments of dialectic*, which refer to *Reality*, to *classes of thought forms* (Laske 2008) which refer to *human thinking*, amounts to constructing a new, powerful instrument “just in time”.

Exactly this was achieved by creating DTF, the Dialectical Thought Form Framework, still widely unknown.

Dialectical Critique

Dialectical Critique achieves more than critique.

What initially *appears as* an analysis of the thought form structure of thinking of individuals, groups, teams, and ideologies, either in real time or based on texts (Ulmer & Frischherz 2014), can easily be retooled for boosting individuals' thinking and collaborative intelligence in teams.

Analysis tools then become tools for mind opening *through self-reflection* that has *potentially* adult-developmental effects, and *can bring about culture change in organizations*.

Most people pay foremost attention to the contents of their own and others' thinking (the “What”), unaware that and how *thought content* derives from the *present* thought form structure of their thinking.

Using a meta-thinking tool such as DTF leads too creating jolts of awareness that in

“thinking” one is actually *constructing* the world one is only aware to be *describing*.

This awareness easily translates into an *opportunity to distance oneself from* the many “models” one is unwittingly adopting as props for thinking, (which do nothing but *impose constraints on what can actually be thought*, thus destroying untrammelled movements-in- thought).

Laying bare the *thought form structure of thinking* is particularly powerful in organizational contexts *where thinking is largely culturally pre-determined*

and therefore difficult to put oneself at a distance from, *especially as a logical thinker*.

It is in such a context that a *meta- thinking consultation* by external consultants who are DTF experts can have dramatic effects:

What was believed to be the “*truth*” about a situation, event, or strategic goal, *when thought about dialectically* turns out to be nothing more than one of many possible “presentation problems” that begs to be seen in its true light in a broader thought form context.

While there are many variations of how a *meta-thinking consultancy* may be carried out, below is a suggestion based on my own experience of using DTF in work with teams, circles, and groups:

1. The facilitator(s) sketch(es) the idea that *most real world problems do not yield to logical thinking* but require systems thinking if not complex thinking in terms of the four moments of dialectic (Table 7, row 1).
2. They define the consultation as consisting of ***mind-opening exercises*** using the four moments of dialectic and their associated thought forms.
3. They emphasize that the ***mind-opening effects*** of the consultation will dwarf finding any kind of expected solution to problems put forward.
4. They bring forward the notion of “classes of thought forms” and “individual thought forms” using the s table of TFs (Table 4), making the latter *the center of all exercises*.
5. After this introduction, they ask for a volunteer “problem presenter” who launches a conversation by stating a *motivating and serious* strategic problem.
6. They invite participants to offer comments and critique of *how the problem was initially formulated*.
7. Together with the facilitator(s), the group *reflects on what, in terms of the four moments of dialectic, is absent from* [not seen, hidden, denied, distorted, smoothed over, ideologically fused with or split from, etc.] the problem formulation *in terms of the four moments of dialectic* (Table 7, row 2).
8. The group harnesses the additional insights gathered through dialectical comment and reflection, *comparing it to the initial (“first-shot”) presentation problem*.
9. The group assesses how the problem formulation *has changed* by critically reviewing it, and by deciding what elements of the dialectical review of the problem need to enter

into *the synthesis making up of the “real” problem.*

10. The group reflects on the *opportunities and risks that emerged* when gathering the results of the problem review.
11. The group *narrows the discussion* to decide what steps to take to “solve” the problem, choosing the most *reasonable risks* and discussing the *opportunities* they may open up
12. The group proceeds to another, different or related, presentation problem.

The table below summarizes the structure of the consultation outlined above.

Three Phases of DTF Meta-Thinking Consultations

Phases of Team Work	Focus 1: What are the <i>risks</i> involved?	Focus 2: What seems to be the best <i>solution</i> ?
<i>Opening to explore</i>	Mindset: Seeing possible opportunities and risks. Question: What might go wrong, what could happen if...?	Mindset: Envisioning a brighter future. Question: What would be the ideal scenario to end up with?
<i>Synthesizing findings</i>	Mindset: Bringing together what initially was lacking, with a focus on opportunities and risks found. Question: What needs primary attention in our decision making?	Mindset: Composing a future from the pieces added through mind-opening. Question: What, with known risks in mind, are the true opportunities
<i>Narrowing to decide</i>	Mindset: Minimize seen risks Questions: Which risks can we take? What opportunities does taking them open up? What, regarding these risks, needs to be attended to?	Mindset: Looking at quick wins and gains Question: What is the very best move to make right now?

Table 8: Three Phases of a DTF Meta-Thinking Consultation
(Adapted from © 2015 Connect & Transform)

Throughout the consultation process, the DTF-schooled facilitators (coaches) consistently exercise their dialectical listening and mind-opening capabilities.

Doing so requires an expert who is not only able to analyze speech flow *in real time*, but can also *model dialectical thinking for others on the fly*.

DTF Applications in Organizations

Applying DTF in organizations and institutions is in itself the beginning of a *culture transformation* that dominant logical thinking *has so far made impossible*.

Whatever the reasons for opening to DTF may be, it is based the insight that *the world is not logical*, and that following formal logic or even systems thinking is a trap *as far as understanding transformations goes*.

This opening only appears when thinking is no longer blocked by the priority of “getting things done”.

1. Cognitive Coaching

Since its beginning in the 1980s, coaching has remained thoroughly *behavioral*, ignoring adult-developmental research findings.

As a result, dialog is conducted *unaware of clients' present developmental profile*. Under these circumstances, *cognitive coaching* based on dialectical thought forms is, in my own and my students' experience (Vurdelja 2011), highly effective in boosting executives' fluidity of thinking.

It has shown itself to be highly effective wherever individuals are “in over their head” in their organizational work, in the sense that their *size of role* is bigger than their present developmental *size of person* (Jaques 1998), regardless of competences s(he) may have.

By interviewing executives and managers in the framework of the *Three Houses* (Fig. 10), the DTF expert can succinctly assess how flexibly and deeply an individual conceptually makes sense of his or her *organizational function* in an organization and its environment.

Such an assessment also shows the developmental resources *for more* flexible thinking that an individual *currently possesses*.

2. Talent Management, Recruitment and Retention

Another important application of DTF meta-thinking involves assisting human resources management as well as change management (Laske 2015b, 2008b, 2002; Vurdelja 2011).

Since the *prevalent models* of human resources are all *based on purely logical thinking*, the transformational character of human resources gets disregarded, which frequently results in business failure, at least in missing possible breakthroughs (De Visch 2010, 2014).

In change management linear notions fail to anticipate real-world transformations (what formal-logic speak calls “disruptions”) *that are either predictable or inevitable*.

As in other domains of society where *logical abstractions are made the foundation of managing complex transformations*, denying the power of individuals' longitudinally increasing cognitive resources *is a recipe for failure*, in this case failure in the market.

This recipe for failure gains in strength to the extent that the deep thinking humans are capable of, *is replaced by algorithms*.

3. Organizational Design

A third important application of DTF has to do with realizing that *new organization designs* require taking into account the unequal cognitive resources available in a group or “circle”.

Where a cognitively defined management hierarchy does *not* exist, as is the case, for example, in holacracy, individuals require *assistance with developing fluidity of thinking* to various degrees, *depending on the zone of proximal development they are in* (Vygotsky 1978).

In this context, both DTF assessment and cognitive coaching become *crucial* aids for implementing designs aiming to establish a ***deliberately developmental organization*** (DDO).

Since DDO has so far only been thought about in social-emotional terms (Kegan 1982) but not cognitive terms – other than by Laske (2015, 2008), *holacratic* designs face undiminished hurdles (Boyd and Laske 2017)

4. Policy Design

An area of increasing importance relative to DTF is policy design in national governments, e.g., for a “green” and/or “circular” economy or for coping with global warming and other looming crises. Presently, public planning in this area is characterized by a strong tendency to rely exclusively on formal-logic based models.

The use of *DTF supports more holistic and systemic thinking* about the impact algorithms exert on the natural transformations a city or society is undergoing, thus helping to avoid policy failures (Ulmer & Frischherz 2014; Frischherz 2012, 2013a/b; De Visch, Ulmer, and Laske, 2016).

5. Creativity in Science

In the era of “alternative facts” science is in jeopardy from those sidelining, and thereby sabotaging, logical thinking.

Such sabotage is made all the easier *where the cultural consensus regarding science* is that it *cooperates with monopolistic industries bent on extracting huge profits from those in need*.

Given that the sciences pervasively use formal- logical and system models, cutting edge research – in whatever field – becomes possible based on exposing purely algorithmic models *to dialectic critique and deepening their thought form structure* (Horkheimer 2014).

Historical Note

How the Manual Came to Be

The Dialectical Thought Form Manual (DTFM) was compiled for the purpose of facilitating the learning and practice of dialectical thinking.

Such a manual is nowhere to be found in the published literature, although for professional practice it has been shown to be a priceless tool (De Visch 2014; Vurdelja 2011).

The absence of such a manual reflects the *absence of institutional scaffolding* for teaching such thinking which could easily start with teaching *children* dialectical thought forms (Veraksa 2013; Belolutskaia 2015).

The author has researched and taught dialectical thinking as an adult-developmental achievement at the Interdevelopmental Institute (IDM) for 15 years. He has designed *the*

only graduate teaching program for instruction in dialectical thinking in existence that is based on his own developmental interviewing and listening practice. He has not found as effective an approach as his own teaching, and therefore considers the IDM program as a Royal Road to acquiring dialectical thinking.

Graduates of the Interdevelopmental Institute (www.interdevelopmentals.org), such as Dr Iva Vurdelja, Prof. Jan De Visch, Nicholas Shannon, Prof. Bruno Frischherz, Karin Ulmer, Raechel Ford, Angela Neighbours, Brendan Cartmel, Alessandro Rossi, and Gord Theo, Paul Anwandter as well as students at the latter's Academia Inpact, Santiago de Chile, have brought dialectical or "deep" thinking into executive and life coaching, supervision, strategic design, leadership development, change leadership, teamwork, and psychotherapy, socio-drama, even policy design.

The Broader Historical Context

After the demise of the Frankfurt School in the early 1970s' dialectical thinking became a topic of interest again on account of research in *adult cognitive development* within the Kohlberg School at Harvard University, Cambridge, MA.

In 1978, *M. Basseches* took note of research by K. F. Riegel on dialectical thinking (1976; 1973) and began developing his own framework for semi-structured cognitive interviewing meant to probe individuals' *cognitive* profile with regard to *dialectic*.

For this purpose, Basseches developed the notion of "schema", called "thought form" by Laske (2008), as a focus of measuring maturity of adult thinking.

His publication of *Dialectical Thinking and Adult Development* (Basseches 1984) presented his empirical findings and thereby established a new, empirical, research tradition which is now fully embedded in the DTFM.

Without knowledge of Basseches' work, in 1993 *Roy Bhaskar*, having founded *Critical Realism*, approached *dialectic from the viewpoint of ontology* (rather than *epistemology as the Frankfurt School and Basseches had done*).

Based on the most lucid critique of the western philosophical tradition, with a strong focus on Hegel's dialectic, Bhaskar proposed that dialectic had to be "re-totalized under the sign of absence."

By this he meant the *dialectic's focal concept ought to be "negativity", that which is not (yet) there, or "absence"*.

He showed in detail that "negativity" appears in different forms in each of the four moments of dialectic (MELD, refer Table 3), and that *ontologically, as Non-Being*, it unremittingly pervades "*Being*" (Laske 2008).

In 1999, Otto Laske, a student of Adorno's, wrote a dissertation based jointly on Kegan's and Basseches' work in which he used the latter's schemata framework to investigate the *cognitive* profile of six executives for the purpose of coaching research.

For this purpose, he *refined Basseches' Schemata Framework and renamed it the "Dialectical Thought Form Framework"*, or DTF.

Seven years later, having encountered Bhaskar's work on the four *moments* of dialectic, Laske became aware of the equivalence of Basseches' "classes of thought forms" and Bhaskar's "four moments of dialectic" which paved a path toward *dialogical dialectic*.

In order to explicate this equivalence, in 2008, Laske wrote volume 2 of *Measuring Hidden Dimensions*, a book connecting E. Jaques' work on Requisite Organization (1998) to both Basseches' and Bhaskar's work, for the purpose of creating a comprehensive theory of work and work capability.

The present Manual (DTFM) first appeared as an Appendix to Laske's 2008 volume, conceived as a tool set for facilitating and boosting dialectical thinking in organizations.

The very first manual of dialectical schemata was written in 1981 by a student of Basseches, Michael Bopp, but never saw publication beyond the dissertation format. However, in the late nineties, when Laske worked on his second dissertation, he took note of M. Bopp's work, and who very generously shared his manual of dialectical schemata with him. As a result, Laske was able, in 2008, to publish the present manual in the Appendix of his volume 2, thereby completing the circle begun by Riegel 35 years earlier.

As documented above, the present text of the DTF manual – which hopefully will remain a work in progress -- is a synthesis of empirical research on dialectic since 1973, and thus summarizes more than 40 years of empirical and theoretical study. Having been used in the teaching of CDF at the Interdevelopmental Institute (IDM) for nearly 10 years, the manual can be said to have proven its pedagogical value.

It is still the only existing manual of this kind in the world today.

Otto Laske
Gloucester, MA,
USA December
2017

Constructive Developmental Framework (CDF)

Adapted from Wikipedia, the free encyclopedia

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1. Overview

The **constructive developmental framework (CDF)** is a theoretical 3-part framework for *psychological assessment*. The framework is based on empirical developmental research showing that an individual's *perception of reality* is an actively constructed "*world of their own*", unique to them and which they continue to develop over their lifespan.

The CDF methodology provides three epistemological perspectives of the individuality of clients as well as teams, by measuring three essential aspects of a person:

- social–emotional development (ED),
- cognitive development* (CD) and
- personality profile (NP).

The latter describes a person's likely behavior in terms of their psychological '*needs*' and '*press*' – the environmental forces that they perceive acting on them [concepts developed by the psychologist [Henry Murray](#)].

In CDF, the **social–emotional** development of a person is typically measured in general and abstract terms as a '*stage*'.

In contrast, a person's **cognitive** development is measured in terms of their use of *dialectical thinking*, which is much more specific to the individual.

The most differentiated view is offered by the **need–press personality profile** - which measures the psychodynamic aspects underlying the behavior of a person.

All three dimensions of a person need to be determined in conjunction in order to do justice to an individual in an assessment.

The empirical methodology and research underlying CDF open up questions about *the intrinsic relatedness* of these 3 parts of consciousness.

Kegan (1982) described five stages of development, of which the latter four are *progressively attained only in adulthood*.

Basseches (1984) showed that adults potentially transcend formal logical thinking by way of *dialectical thinking*, in four phases, measurable by a fluidity index.

Laske (2015) proposed that dialectical thought forms are an instantiation of Bhaskar's four *moments of dialectic* (MELD; Bhaskar 1993),

and that these ontological moments form a *sequence* $M \rightarrow E \rightarrow L \rightarrow D$ that underlies individual *cognitive development* (Laske 2015), providing a basis for a dialectical cognitive science.

2. Social–emotional development

Stages of adult development

According to the developmental psychologist Robert Kegan, a person's *self-concept* evolves in a series of stages through their lifetime.

Such evolution is driven alternately by two main *motivations*:

- 1) that of being autonomous, and
- 2) that of belonging to a group.

Human beings are "controlled" by these motivations in the sense that they do **not** have influence on them **but** are rather *defined by them*.

Additionally, these motivations *are in conflict* and their relationship develops over a lifespan.

Of Kegan's 5 stages of development, only a small proportion of adults reach the fourth stage and beyond:

- **Stage 1:** Purely impulse or reflex-driven (infancy and early childhood).
- **Stage 2:** The person's *sense of self* is ruled by their needs and wishes. The needs and wishes *of others* are relevant only to the extent that they support those of the person. Effectively the person and others inhabit two "separate worlds" (childhood to adolescence).
- **Stage 3:** The person's *sense of self* is socially determined, based on the real or imagined *expectations of others* (post-adolescence).
- **Stage 4:** The person's *sense of self* is determined by a set of *values that they have authored* for themselves (rarely achieved, and only in adulthood).
- **Stage 5:** The person's *sense of self* is *no longer bound* to any particular aspect of *themselves or their history*, and they are free to allow themselves to *focus on the flow of their lives* (very rarely achieved, and after the age of 40 – often much later).

CDF refers to such stages as "social–emotional" in that they relate to the way a person *makes meaning* of their experience in the social world.

CDF holds that people are rarely precisely at a single stage but more accurately are *distributed* over a range where they are subject to the *conflicting influences* of a higher and a lower stage.

The social–emotional profile of a person

The *social–emotional profile* of person is assessed by means of an interview, referred to as the "subject–object" interview.

In the interview, the interviewer offers prompts such as "success", "change", "control", "limits", "frustration", and "risk" and invites the interviewee to describe meaningful experiences under those headings. The interviewer serves as a listener, whose role is to focus the attention of the interviewee onto their own thoughts and feelings.

The interview is *scored by identifying excerpts* of speech *that indicate a particular stage or sub-stage*. Relevant sections are chosen from the transcript of the interview and analyzed for indications of the stage of development.

The most frequent sub-stage revealed by the *scoring* is described as the interviewee's "*center of gravity*". Stages scored at **below** the center of gravity are described as "*risk*" (of regression) while stages scored **above** the center of gravity are described as "*potential*" (for development).

The distribution of scores is summarized by a "risk–clarity–potential" index (RCP) that can be used to characterize the nature of the developmental challenges facing a person.

3. Cognitive development

Eras of adult cognitive development

According to [Jean Piaget](#), thinking develops in 4 stages from childhood to young adulthood: sensory-motor, pre-operational, concrete-operational, and formal-operational. Development of *formal-operational* thinking is considered to continue until approximately until the 25th year of life. In CDF, the development of *post formal-operational* thinking in an adult is indicated primarily by the presence of *dialectical thinking*.

In CDF, human thinking is seen as developing in four sequential phases or '*eras*', termed '*common sense*', '*understanding*', '*reason*' and '*practical wisdom*'.

The first three phases of thinking development can be related to the different thinking systems put forward by the philosophers [Locke](#), [Kant](#) and Hegel.

Each phase *includes and transcends* the thinking system of the previous phase.

The final phase of '*practical wisdom*' loops back to a *higher form of 'common sense'* in that it constitutes effortless sophisticated thinking that has become second nature.

In contrast to other adult development researchers such as [Fischer](#) and [Commons](#), Laske describes post-formal cognitive development in terms of the *use and co-ordination of dialectical thought forms*, which are themselves described as mental schemata.

Four classes of dialectical thought forms

Dialectical thinking relates to the search for truth through reasoned argument. Essentially, *dialectics* is viewed as the *system* by which human thought attempts to capture *the nature of reality*. Building on [Bhaskar](#) and Basseches, CDF uses a framework for dialectical thinking based on the idea that everything in reality is transient and composed of contradictions, part of a larger whole, related in some way to everything else, and subject to *sudden transformation*.

This framework distinguishes four *classes* of dialectical thought forms (TFs), PCRT, that can be said to define reality:

- **Process (P) – *constant change*:**
 - how things or systems emerge, evolve and disappear
- **Context (C) – *stable structures*:**
 - how things are part of the structure of a larger, stable, organized whole.
 - the *contextualization* of *parts within a whole* gives rise to *different perspectives* or points of view
- **Relationship (R) – *unity in diversity*:**
 - how things (all part of a larger whole) *are related* and the nature of their *common ground*
- **Transformation (T) – *balance and evolution*:**
 - how living systems are in *constant development and transformation*, potentially via a collapse of the previous form of organization, and subject to the influence of human agency.

In addition, CDF distinguishes *seven individual thought forms for every class*, making a total of 28 thought forms, representing a re-formulation of Basseches' 24 schematas.

Basseches	Bhaskar			Laske	
<i>Form</i>	First moment	1M	<i>non-identity</i>	Context	C: TF 8-14
<i>Motion</i>	Second edge	2E	<i>'negativity', absence, not here yet)</i>	Process	P: TF 1-7
<i>Relationship</i>	Third level	3L	<i>totality</i>	Relationship	R: TF 15-21
<i>Metaform</i>	Fourth dimension	4D	<i>human transformative praxis</i>	Transformational System	T: TF 22-28

Table I.1: Dialectical Moments Equivalence

(For historical reasons the TF sequence is PCRT, thus **P(1-7)**, **C(8-14)**, **R(15-21)**, **T(22-28)**)

The cognitive profile of a person

The cognitive profile shows the degree to which a person's thinking has developed as indicated by their *use of dialectical thought forms* in the four classes.

The profile is derived by means of a semi-structured interview

where the interviewer has the task of eliciting the interviewee's *use of thought forms* in a conversation about the interviewee's work and workplace.

The *text of the interview* is subsequently *analyzed and scored* to give a series of calculated indicators.

According to CDF, thinking that is highly developed is represented by the following features:

- a *balanced use of all four classes* of dialectical thought forms (P, C, R, T)
- a high index for *systemic thinking* – meaning the use of transformative thought forms (T)
- *balanced use of critical and constructive thought forms* : (P+R) vs. (C+T)

4. Link between *social–emotional* development and *cognitive* development

Social–emotional and cognitive development are seen as separate lines of development *but linked by the "stage of reflective judgment" or "epistemic position,"* described as the view taken by a person on what constitutes "knowledge" and "truth".

Epistemic position defines a person's ability to deal with uncertainty and insecurity in their knowledge of the world and, *together with* the stage of *social–emotional development*, reflects the "*stance*" that a person takes towards the world.

Whilst *cognitive development* provides a person with "*tools*" for *thinking* consisting of thought forms derived from both logic and dialectics, the "*stance*" that a person takes *determines whether they apply the thinking tools at their disposal*.

5. Personality

Psychogenic needs and press

CDF employs the psychologist Henry Murray's theory that much of *human behavior* is determined by the effort to satisfy psychological (or "psychogenic" needs), many of which are **unconscious**. *Personality* is thus *characteristic behavior* emerging from the dynamic between a person's *pattern* of psychogenic needs and the environmental forces acting on that person – termed "**press**".

The **need–press analysis** draws on Freud's model of the human psyche divided into the components of Id, Ego and Super-ego.

In living, a person is subject to the unconscious yearnings of the Id, whilst **consciously** aspiring to certain ideals imposed by the Super-ego, *which itself is influenced by the social context*.

It is the dynamic balance between the forces of Id and Super-ego and the work environment that determines a person's *capacity* for work.

Imbalances between the *social reality of work* and *a person's ideals* lead to frustration, and *imbalances* between a person's *unconscious needs* and *their ideals* lead to a waste of energy or "energy sink."

The personality profile of a person

CDF assessment methodology uses a self-report psychometric questionnaire originated by Henry Murray's student Morris Aderman, called the *need–press inventory*.

The questionnaire assesses psychological characteristics in terms of three categories:

self-conduct, ***task focus***, and ***interpersonal perspective***,

and compares a person's current needs with

- 1) what they would like in an *ideal world* and
- 2) what they *perceive* they are offered *in actuality*.

Each category is composed of several scales such as:

<i>Self-Conduct</i>	<i>Task Focus</i>	<i>Interpersonal Perspective</i>
Self concept	Autonomy	Affiliations
Risk-taking	Drive to Achieve	Relationship to Power
Flexibility	Resourcefulness	Empathy
Need for Power	Endurance	Helpfulness
Need for Visibility	Quality of Planning	Dependency
Confrontationalism	Need to Self-protect	Bias

Comparisons and interpretation can be made between a person's scores for "*Need*", and their scores for ideal and actual "*Press*". Comparisons can also be made between a person's scores and those of the group of people with whom they are working.

6. Applications

Assessment of work capability

CDF's *assessment methodology* was created to measure peoples' ***capability*** and ***capacity for work***.

The theory of work used by CDF is derived from the work of Elliott Jaques who defined work as *the application of reflective judgment* in order to pursue certain goals ***within certain time limits***.

This definition stresses the importance of decision-making and the time-span within which decisions are carried out. *While Jaques offers a strictly cognitive definition of work*,

CDF views the social–emotional aspects of work as equally important.

CDF distinguishes between *two kinds of work capability*, applied and potential.

Applied capability refers to the *resources* that an individual *can already apply* to carry out work. **Potential capability** refers to the resources that an individual *may be capable* of applying in the future. An individual can decide at any time *not* to apply their **potential work capability**. Equally circumstances may *impede* a person from *applying* their **potential**.

Work capability is therefore *not the same as* the **capacity to deliver work** but rather defines it.

In CDF **work capacity** is measured in terms of the need–press personality profile, whilst **applied capability** is measured in terms of the thinking tools shown up by the *cognitive profile*, and **potential capability** is measured in terms of the **risk–clarity–potential score** taken from the *social–emotional profile*.

Organizational talent management

For Elliot Jaques,¹ human organizations are *structured managerially* according to levels of **accountability**. Each level of accountability entails a *higher level of* complexity in the work required of the role-holder, termed "*size of role*".

Jaques defined the notion of *requisite organization*, where *roles* in an organization are *hierarchically organized* at specific levels of increasing complexity.

The application of CDF as an assessment methodology to measure the "*size of person*" in terms of their *work capability and capacity* provides a way forward for talent management systems to match the "*size of person*" to the "*size of role*".

Progressively more complex roles require *progressively higher levels* of social–emotional development and cognitive development in the *role-holder*.

In this way *requisite organizations* can align their *human capability architecture* with their *managerial accountability architecture* and design "growth assignments" that facilitate the development of *capability* for more complex roles.

Coaching

CDF provides a professional *coaching* platform such as in *leadership development and management*:

It provides assessment tools from which the coach can construct an *integrated* model complete with the developmental challenges of the client who is to be helped.

In the sense used by Edgar Schein¹ the use of the assessment tools and the feedback of results by the coach is an act of "process consultation" by which the client may come to understand better the assumptions, values, attitudes and behaviors that are helping or hindering their success.

CDF provides tools for **deeper and more sophisticated thinking**, thereby enabling the client to *explore and expand* their conceptual landscape of a problem.

CDF distinguishes between *behavioral* and *developmental* coaching.

The goal of *behavioral* coaching is to improve the client's actual performance at work, described in CDF terms as their *applied capability*.

In contrast, the goal of *developmental* coaching is to *illuminate and develop* the client's *current and emergent capabilities* for work *in the context of* their *cognitive and social–emotional development*.

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