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Integrating Dynamic Systems Theory and City as Text™ Framework: In-Depth Reflections on 'Lens'

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INTRODUCTION

City as Text™ provides a semi-structured learning environment in which small groups of people are challenged to examine parts of a city through "mapping, observing, interpreting, analyzing, reflecting." In 2014, I (Ron Weerheijm) attended a City as Text (CAT) Faculty Institute in Lyon. During an early session on the hills overlooking the eastern part of Lyon, our group observed a Basilique, the Notre Dame de Fourvière (1872–1884; interior finished 1964). Having a degree in architecture, I looked at this church from architectural and historical viewpoints. I was puzzled. In a quick scan, many different styles competed for my attention, hurting my eyes with all those columns, bases, ceilings, and influences

from the Greeks to the Moors and from Ancient Egyptian to French architecture all in one building. My impression was that the church had been built by an architect who had not been able to choose what style to build it in or what tradition to connect it to. At the time, I did not know that locals sometimes referred to the church as "an elephant lying on its back." I was unconsciously viewing it as an architectural professional with knowledge about the styles and typology of buildings. From this perspective, the church did not fit into any category; it was an outlier. I concluded that the church was bombastic: I emotionally judged it to be ugly.

One of our group was a Christian. She looked at the same church I did but reflected on it from a religious perspective: as a place of worship, a place to feel connected to God, and as a place where she could celebrate His "being." Her upbringing determined her focus of reflections. Our views collided even though we observed the same building from the same hill on the same morning: I thought the church was ugly, whereas she felt it brought her "closer to God." In our dialogue about why we saw what we saw, we discovered our divergent thoughts and feelings about the same object and could see that they reflected our backgrounds. Her Christian context enriched my perspective on this church, and my architectural context enriched my colleague's reflections. Instead of accepting polarizing views, we became aware that our inner context strongly determines how we reflect on external cues and that we are frequently unaware of the impact these internal processes have on our communication with others in daily life.

According to Bernice Braid, a facilitator of the Lyon 2014 Faculty Institute, these observations were rich with possibilities as illustrative material. The group spent some time at Notre Dame de Fourvière, and its design was the primary subject of our discussion, largely negative on aesthetic grounds but quite provocative. In addition to the issue of materials and design, proportions, and layout, however, there was the notable range of focus among viewers: the building as monument (it is enormous, featured in the city's marketing materials as a visual symbol, brightly lit for nighttime viewing and overlooking the entire city); the building as a place of

worship; and the building as a cultural museum containing endlessly rich statues and commemorative images that tell an entire history, sometimes in ironic ways. We noted also its continuing existence, maintenance, and prominence: from issues of interior design and visible upkeep to a domestic building down by the river that is its exact replica, though much smaller, suggesting that the architecture itself has been valued, or at least intentionally preserved, by the city even though many find it unattractive or ungainly.

Individuals in the group represented a wide variety of interests and training, from journalism to classics to architecture to literature and more. Discussion, as a result, was vigorous during our initial reflections in front of the Basilique; then it kept coming up as a refrain in all later reflection sessions and in the culminating workshop on Turning Point Essays and applications. It aroused profound, divergent, and passionate commentary, including deep distaste and broad admiration. The entire group seemed fascinated by the fiery rhetoric everyone used—"It's ugly"; "It's amazing"; "It's unforgettable"; "I hate it"—and our evident inability to forget or dismiss it. Questions persisted about why and when it was built and why it was restored in the twentieth century.

The image of the church, present in discussion though absent visually, never disappeared, returning in virtually every reflection session and culminating in the final Turning Point Essay workshop, which is both a deep reflection session and a jumping off point for a working session on how to apply the strategies we used in Lyon to other contexts. What was evident in this final daylong event was the continuing intensity that each participant expressed in search of the moment when observations clicked, and it was also evident that the way each viewer constructed that moment shed light on process and product. To the facilitators' surprise, one of the most intense images recurring as an example of how and why a "lens" works was that "elephant on the hill."

What we had in hand, then, was a shared experience that fractured into a kaleidoscope of images such that each person in the room had a revelatory moment captured forever: each internalized photo shot was different from everyone else's. Such shots had many

iterations: a) observations; b) interpretations; c) analyses; and d) reflections—all occurring in four and a half days of mapping/discussing/writing. The power of that single sunny day on the hill may have derived precisely from the unsettling discovery of how differently each person saw, savored, and sustained what became a dominant memory and an echo of a challenging experience. Notre Dame became the recurrent metaphor for the entire experience of Lyon and of our time together: a challenge, delight, horror, and wonder, unforgettable perhaps because it was unresolvable into a single image signifying a single thought. Because of its complexity and the contrariness of viewpoints about it, this Basilique is a perfect meme for what Clifford Geertz reminds us is "thick description." And it resonates still.

Our experience of the Basilique is a valuable centerpiece in examining the overall strategy of professional training institutes open to faculty who wish to adapt it. City as Text Institutes bring together small cohorts of learners from divergent disciplines and countries who convene for four to six days to work through several experiential learning cycles, always culminating in a daylong workshop for which participants have written extended reflections (the Turning Point Essay) that serve as texts for open discussion. Making faculty and students aware of disjunctions through the CAT framework supports their personal and professional development and has several unique benefits; mapping, observing, interpreting, analyzing, and reflecting are assignments that challenge the diverse group of participants to open their eyes and minds, sharpen their senses, pay attention to each other's reflections, and integrate them into new conceptions of their surroundings.

Having worked their way through all four stages of David A. Kolb's Experiential Learning Cycle model (concrete experience, observations and reflections, formation of abstract concepts, and generalizations/testing implications of concepts in new situations) and done so eight or nine times in a six-day institute, individuals are in a position to unpack their own experiences as if they were students themselves. They can consider how to apply their efforts as faculty to new sites and situations. The discomfort evident among

people used to thinking of themselves as experts is expressed in these final workshops, but significant excitement is audible in all the voices as the discussions echo with the surprise and discovery of recognizing signs of a breakthrough.

We develop here various theoretical and philosophical aspects of this interplay between inner context, i.e., socio-cultural background, and outer contexts, introducing a well-known Dutch evidence-informed reflection methodology that incorporates six key assumptions of the Dynamic Systems Approach (DSA). Integrating DSA with reflective processes on the interplay between inner/outer context offers facilitators a stronger grip on affecting students' learning experiences, which optimizes the learning processes of individuals and groups who participate in CAT.

The Dynamic Systems Approach (DSA) provides another lens through which to examine the role that open-ended, inquiry-based exercises in observation, interpretation, analysis, and reflection can play when used as cognitive learning tools. By explaining how DSA works to produce its results, we provide additional tools for effective learning strategies. Figure 1 illustrates the impact of each stepping-stone in this approach. City as Text strategies aim to introduce practitioners to organizational structures that include the acquisition of raw information built into a framework that invites students to notice, remember, understand, and then structure what they remember so as to analyze it, make sense of it, and then consider how it has functioned as an instrument for making sense of their world and their place in it. With this apparatus available to them, they begin to think about how their complex map of experiences compares to and sheds light on all other experiences they have had, providing them with tools to set out mapping new territory.

THEORETICALLY BASED INNOVATIONS FOR NEW CITY AS TEXT STEPPINGSTONES

This paper addresses three theoretical innovations for the current City as Text method. First, we introduce a developmentally appropriate conceptualization of the inner context construct.

Second, we introduce the Dynamics Systems Approach and discuss how the six key assumptions of the DSA can stimulate students to reflect more deeply on the interplay between outer and inner contexts. Third, we develop an evidence-driven reflection model that is suitable for systematic reflection on the DSA components. This integrated reflection model provides facilitators with several theoretical and didactic steppingstones to encourage students to discover intrapersonal and interpersonal developmental processes within the CAT method. Figure 1 visualizes these theoretical innovations and their elaborations into new CAT steppingstones, which are then outlined in more detail.

STEPPINGSTONE 1:

THE INDIVIDUAL STUDENT IN DYNAMIC INTERPLAY

WITH HIS/HER EDUCATIONAL CONTEXT

The first steppingstone of the CAT method is awareness of the unconscious influence of socio-cultural background on observing an outer context. By making this inner context explicit, the facilitators of the CAT method use this inner context to deepen the conceptual learning. Noah Finkelstein describes the influence of the inner context as the student's lens in his/her learning process. The way the student experiences the learning environment, and hence experiences actual learning, is influenced by his/her lens. The way the lens is formed is described by Gary Alan Fine as idioculture: a system of knowledge, behavior, and habits that together function as the personal lens through which the student experiences the outer context (ctd. in Finkelstein 1194). Both contexts exist next to each other, and querying the interplay between them deepens the learning process of the student.
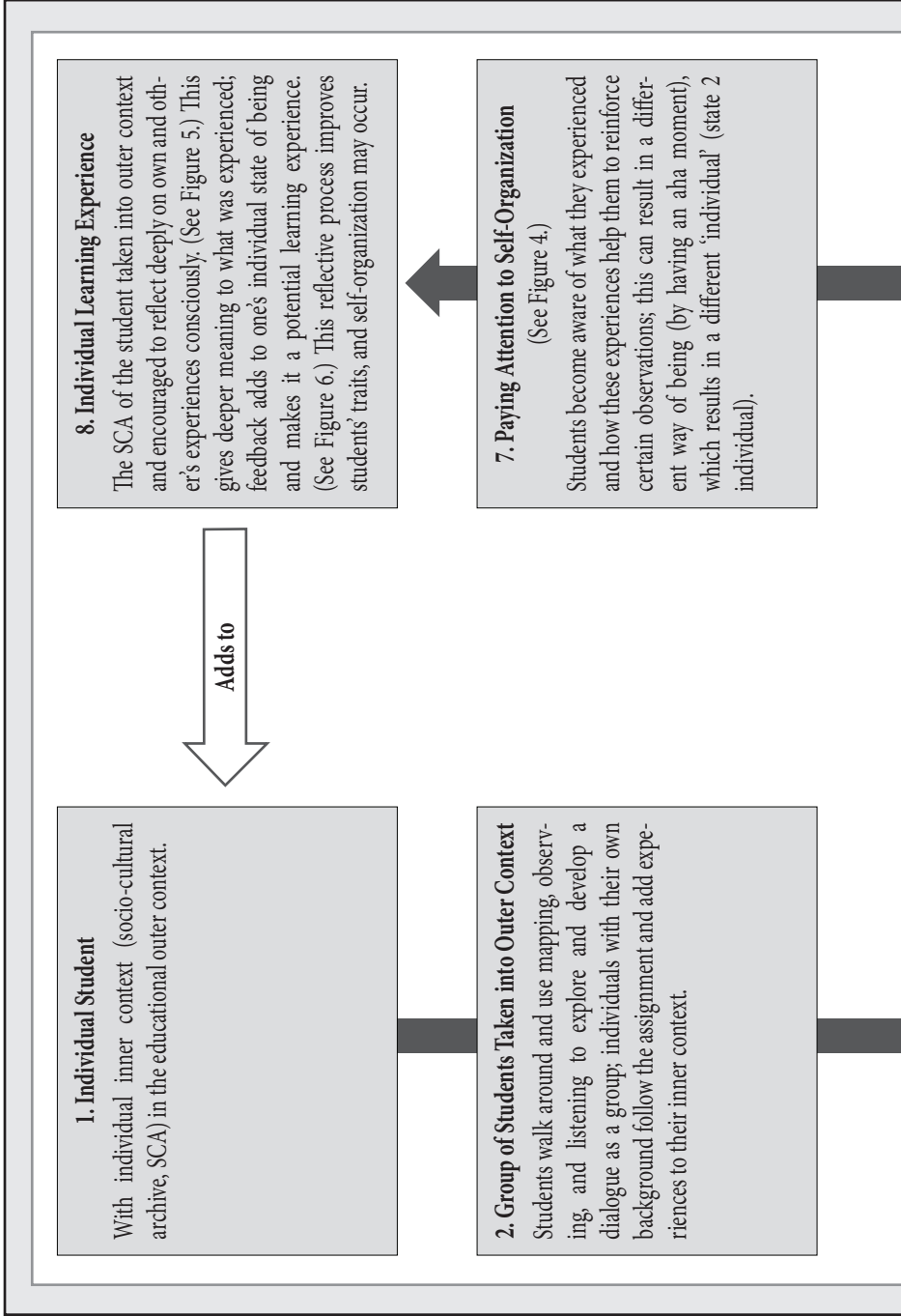
This concept of an inner context has a substantial history. Kate Kirkpatrick, for example, notes that Simone de Beauvoir wrote in 1937, and later in *Le deuxième sexe* (1949), about the idea of "situation." In doing so, de Beauvoir tried to connect her femininity to what she saw not as the "core" or "nature" of her being but as "a situation created by civilization and physiological matters"
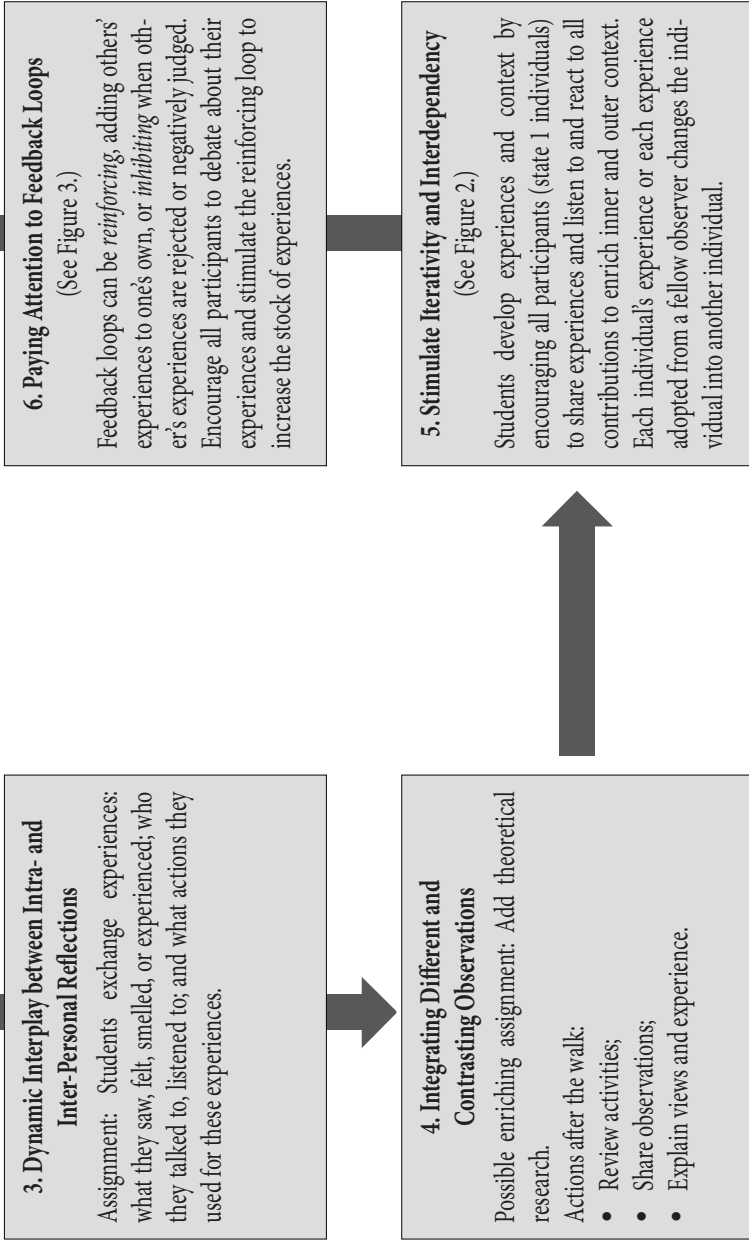
(qtd. in Kirkpatrick 241). Later, she elaborated that this "situation" was determined by a society that offered women fewer possibilities: "Women are 'determined' by society, their social environment, and not by their own ideas and possibilities" (qtd. in Kirkpatrick 278). In this way, de Beauvoir considered gender as a "social construct" consisting of beliefs, ideas, and rules of which most who are enclosed in them are unaware.

In *White Innocence*, Gloria Wekker presents a recent and challenging perspective on the idea of an inner context and how it subconsciously affects how we see the world. In her book about "everyday racism," she uses the term "cultural archive" (first defined by Edward W. Said in *Culture and Imperialism*), which refers to the patterns in our knowledge, attitude, and feelings. How we look at things and talk about things is determined by the society that we have grown up and lived in and that is stored in our personal cultural archive. We consider this cultural archive as "normal." In Wekker's view, being aware of this cultural archive allows us to develop a multi-perspective view or a kaleidoscopic view. The main condition to be able to develop such a view is to be aware of this cultural archive.

Our inner context can be operationalized as our cultural archive without our awareness. This cultural archive serves as our lens on our outer context and is shaped by our backgrounds and by the group and society to which we belong. This inner context is necessary to be successful in education, which cannot exist without it. The connection between inner and outer context was also made by Immanuel Kant: "Space and time are the framework within which the mind is constrained to construct its experience of reality" ("Immanuel Kant Quotes"); in other words, we can only understand the world as far as our own knowledge reaches since we can hardly see what we do not know. Kant distinguishes between what is outside of us ("space and time" as a "framework") and what we as individuals experience or construct within that framework. He considers the mind to be the primary intermediary between space and time and what we see and interpret as reality.

FIGURE 1. NEW STEPPINGSTONES FOR THE CITY AS TEXT TEACHING METHOD

8. Individual Learning Experience

The SCA of the student taken into outer context and encouraged to reflect deeply on own and other's experiences consciously. (See Figure 5.) This gives deeper meaning to what was experienced; feedback adds to one's individual state of being and makes it a potential learning experience. (See Figure 6.) This reflective process improves students' traits, and self-organization may occur.

7. Paying Attention to Self-Organization
(See Figure 4.)

Students become aware of what they experienced and how these experiences help them to reinforce certain observations; this can result in a different way of being (by having an aha moment), which results in a different 'individual' (state 2 individual).

Adds to

1. Individual Student

With individual inner context (socio-cultural archive, SCA) in the educational outer context.

2. Group of Students Taken into Outer Context

Students walk around and use mapping, observing, and listening to explore and develop a dialogue as a group; individuals with their own background follow the assignment and add experiences to their inner context.

3. Dynamic Interplay between Intra- and Inter-Personal Reflections

Assignment: Students exchange experiences: what they saw, felt, smelled, or experienced; who they talked to, listened to; and what actions they used for these experiences.

4. Integrating Different and Contrasting Observations

Possible enriching assignment: Add theoretical research.

Actions after the walk:
- Review activities;
- Share observations;
- Explain views and experience.

6. Paying Attention to Feedback Loops
(See Figure 3.)

Feedback loops can be *reinforcing*, adding others' experiences to one's own, or *inhibiting* when other's experiences are rejected or negatively judged. Encourage all participants to debate about their experiences and stimulate the reinforcing loop to increase the stock of experiences.

5. Stimulate Iterativity and Interdependency
(See Figure 2.)

Students develop experiences and context by encouraging all participants (state 1 individuals) to share experiences and listen to and react to all contributions to enrich inner and outer context. Each individual's experience or each experience adopted from a fellow observer changes the individual into another individual.

The left arrow down shows the City as Text process and evaluation as usually performed; the right arrow up shows the deepening approach by using different steps of awareness derived from the Dynamic Systems Approach. Together they show the iterative learning process that is stimulated by these combined methods.

STEPPINGSTONE 2:

GROUPS OF STUDENTS IN OUTER CONTEXTS

The second steppingstone of the CAT method elaborates the explicit role that the outer context plays in student learning. City as Text focuses on unbiased exploring, which offers students a guide or a way of working. Although it offers abundant freedom to explore, students are instructed to focus on mapping, observing, and listening. They go to the city to map (discover the city layout, its highlights, specific buildings, or points of interest), to observe (people, streets, shops, behavior, traffic, and all that is happening), and to listen (literally hear things, but in fact use all their senses: smell, feel, see things). The idea is to challenge students to absorb the external context as deeply as possible. The context is chosen carefully and includes areas with contrasts or specific tensions, such as new versus old, modern versus worn out, space versus density, traditional versus innovative, or areas that have been transformed. We challenge students to become aware of these dialectic tensions and to reflect on them. The outer context is chosen carefully to make the impact on students' learning experiences as explicit as possible.

We have found different elaborations on this idea of outer context as the surrounding situation or environment of some object or activity. These definitions primarily focus on the usefulness of the idea of context and on what we see and experience in it. Michael Cole points toward the Latin roots of the term "contexere, which means 'to weave together'" (qtd. in Finkelstein 1191). According to Cole, the outer context could be considered as the collection of components and the relations among them—the connected whole that includes constituent elements and the relations among them. John K. Gilbert uses the words "focal event" to define a broader view of context. He therefore includes diagrams, a model, and photographs as objects that could function as contexts: "In this idea we find the first options to describe such circumstances that give meaning to words, phrases and sentences" (960). Taking students into the context of a city defines the circumstances for them; the

city is the "focal event" in which we ask them to search for what they see as meaningful. In this "meaningfulness" we already see the role of an inner context that is present although it is not yet clear how it works. Finkelstein notes an interplay between the context we use and the context of the student, in other words, between the outer context and the inner context.

The role of the outer context should be meaningful, should challenge in-depth observations, and should be attractive enough to become the focal event for the beholder. This context should be engaging enough for mapping, observing, and listening to challenge and to add to previous experiences. On the other hand, we have the inner context that gives meaning to this outer context. We have seen that this meaningfulness largely depends on intrapersonal factors of the observer. Therefore, we define this inner context as the "socio-cultural archive" that forms us as individuals.

STEPPINGSTONES 3 AND 4:
DYNAMIC INTERPLAY AND INTEGRATION

The discussions about what students observed and what intrigued them are the key steppingstones that bring the outer and inner contexts together. These third and fourth steppingstones are the key mechanisms where "development" (i.e., personal and professional growth) takes place. In the Introduction, we mentioned that one can recognize the "inner" context in the reactions of the observer to outer contexts. City as Text is all about this confrontation and how we as facilitators can transform this confrontation into meaningful learning experiences. We add new experiences to existing experiences, and we store new things apart or together with existing experiences. City as Text uses this possibility of storing memories or making associations that help us to remember things, which is what connecting our inner and outer context is about.

Neuroscientist D. F. Swaab states in his book *We Are Our Brains: A Neurobiography of the Brain, from the Womb to Alzheimer's* that we ARE our brains. What we are and what we do are determined by what is in our brains. The brain also determines what we experience

because the brain makes it understandable (meaningful) for us by using the references it has; so when we experience things, we need to be aware that our brains can make unconscious associations. Daniel Kahneman in *Thinking, Fast and Slow* compares our "daily" brain with a pile of post-its that are scanned whenever we need (or think we need) a fast answer to a question that pops up, but there does not seem to be any order in this pile, nor are the words on the post-its well written, readable, or complete and clear. Some memories are better stored than others, some are scrambled and damaged, and some are stored in the wrong place. Burgess, Becker, King, and O'Keefe clarify how the brain stores them and what it considers necessary to remember. An event is transported to longer-term memory with only those details that the brain thinks will be recognized and thus remembered when we try to recollect the event. We do not store events consciously: the brain chooses how the event will be reduced for us, but even though only parts are stored to remember, we will eventually remember the whole event by just activating these stored parts. This process is called "pattern completion," which might include conflicts in the part of the "pattern separation" activity: we sometimes mix up events. Retrieving memories from the brain can be triggered by almost anything (Pointer and Bond). A word, an observation, an odor, or a certain song or sound can recall a certain memory (Pointer and Bond). If we make connections with stored memories and make new memories, we need to realize that this process might be a result of coincidence. The "pattern completion" is a way of learning, is how we add new things to existing parts. When we learn, we add knowledge and experiences to what is already stored, and with every new learning experience, we change our framework (Kant) and will be able to construct a new reality. For this iterative process, the DSA theory is helpful.

The result of the confrontation between the inner and outer context can hardly be predicted because the factor "coincidence" cannot be anticipated. Because we have little influence on what associations our brains make between the inner and outer context, facilitators and students need to be alert to what happens during the

confrontation. Small observations, ideas, events, words, or feelings may reveal interesting or creative confrontations that support students in giving meaning to the outer context. By unravelling these observations, we may understand more about their inner context. The role of the facilitator is to be alert to these sometimes small signs of confrontation, to understand how this process takes place, and to consider what interventions can bring these confrontations to the surface and make them debatable.

STEPPINGSTONES 5, 6, AND 7:

INTEGRATION OF SIX KEY ASSUMPTIONS OF THE DYNAMIC SYSTEMS APPROACH WITHIN THE CITY AS TEXT METHOD

To stimulate students' in-depth learning experiences of the dynamic interplay between intrapersonal and interpersonal reflections within CAT, facilitators must be able to work with a clear conceptualization of the development of inner context in individuals. The DSA, as described by Kunnen et al., provides an appropriate theoretical framework for facilitators to encourage students to wonder about and to discover these intrapersonal developmental processes. The DSA incorporates a non-linear person-centered approach to understanding human individual change processes over time (Kunnen et al.). Through a structured implementation of six key assumptions of the DSA in all CAT steppingstones, facilitators can support students by zooming into intrapersonal and interpersonal developmental processes that lead to personal and professional growth (Kunnen et al.). We now outline these six assumptions and their usefulness for supporting in-depth learning experiences by facilitators and students in CAT, and we offer several new theoretical steppingstones as well for facilitators.

The first assumption is that development and change are always *individual based* (Kunnen et al.). This approach considers both an individual system (an individual student within CAT) as well as individual systems (a group of students as a whole in CAT) as units of study. For the implementation of the CAT teaching method, this assumption implies that facilitators who are working with student

groups need to address the individual development of students as well as their development as a group. Facilitators should be aware that the observations of an individual student are valuable for this student and that these observations should be explicitly connected by the student to his or her inner context. To use the group processes effectively, however, the facilitators should also encourage all students in a group to integrate the reflections (creativity and critical thinking) of the other students on the same outer context into their own individual system, which will support a more in-depth understanding of the outer context by each individual student.

The second assumption is that development of either individuals or groups of participants is *iterative*, causing an individual or a system to continuously change over time (Kunnen et al.). The implementation of the CAT teaching method implies that facilitators should be aware that the development of individual student competencies, thoughts, feelings, perceptions, motivations, and actions proceed step by step: that the next step in a specific developmental pathway builds on the previous step (Kunnen et al.; Vygotski). To support a specific developmental pathway, facilitators must possess knowledge about the underlying developmental theory and use this knowledge to support iterative developmental processes within individual students as well as groups.

The third assumption is the interdependency between a system's (individuals/groups of participants) intrapersonal *state* and the context (Kunnen et al.). Implementation of the CAT teaching method implies that facilitators should not consider the intrapersonal contexts of students to be a stable (fixed) background but a continuous and bidirectional context subject to changes over time during a semester. Finkelstein refers to that principle when he states, "without the inclusion of a *dynamic*, *relational* notion of *weaving together*, the notion of context remains static" (1194, italics mine). Figure 2 visualizes this interdependency between the system and the context.

Translated into CAT: each student or group of students starts as "Adolescent" at T1 (individual baseline) and is brought into the outer "Context" T1 (context baseline). When mapping, observing,

and listening are done attentively, CT1 evolves into CT2 and AT1 evolves into AT2 during the group discussions or study activities. The activities of sharing observations and reflections on all different perspectives lead to AT3 and AT4 in dynamic interactions with CT3 and CT4. In the words of Kant, we see and know more if we have learned from what we saw and will gain the possibility to experience contexts more in-depth than before. In sum, during CAT, both individual and context will change in the dynamic process of learning. Facilitators must support students' learning by studying literature on the interplay of outer and inner contexts in order to stimulate observation-reflection abilities and help both students and instructors to free themselves from arbitrary boundaries (Carvajal).

The fourth assumption is that there are *bidirectional relationships* between components of the system (individual student/groups of students) across time (Kunnen et al.). Changes in one or two components may influence the other components in the system, which in turn may affect other components (van Geert). In CAT, components are the city or the object under observation versus the student or students and the lenses through which they observe the outer context. The facilitator stimulates the dialogue among students to enhance discussion of the components, e.g., the components of "church" versus "architectural education" and "church" versus "upbringing and religion."

**Figure 2. Iterativity and Interdependency**
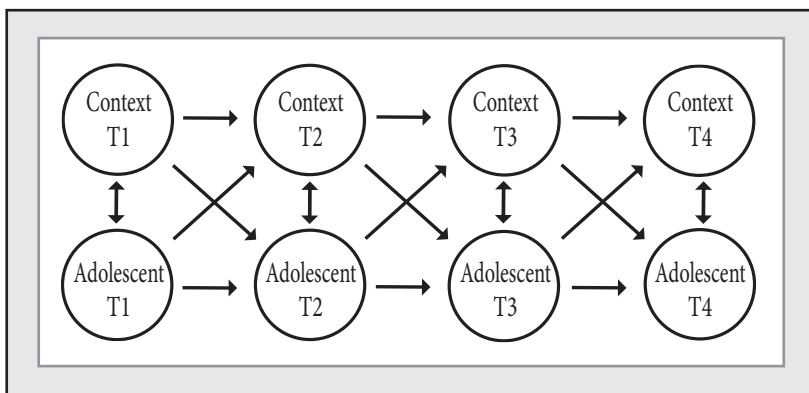
Source: Kunnen et al.; retrieved from van der Gaag, "Iterativity"

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The fifth assumption is that some components reinforce in the same or opposite directions, whereas others have an inhibitory effect. These interactions are referred to as feedback loops. Depending on the reinforcing or inhibitory interactions that occur between components, the state of the developmental trajectory will change (Hollenstein). Interactions between two reinforcing components result in rapid growth, whereas other interactions between inhibitory components result in stability. Reinforcing feedback loops can only continue for as long as other components do not interfere. Figure 3 illustrates the feedback loops for relationships between Academic Performance and Academic Motivation (feedback loop A) and between Academic Performance and Leisure-time Motivation (feedback loop B) (Kunnen et al. 7).

Feedback loop A visualizes CAT processes in which group and individual feedback support the individual student's continuous motivation to add enriching content and in-depth reflections to the dynamic interplay between the outer context under study and his or her inner context. For instance, the feedback and the reflections of the facilitator or other students on the initial observations of the

FIGURE 3. FEEDBACK LOOPS
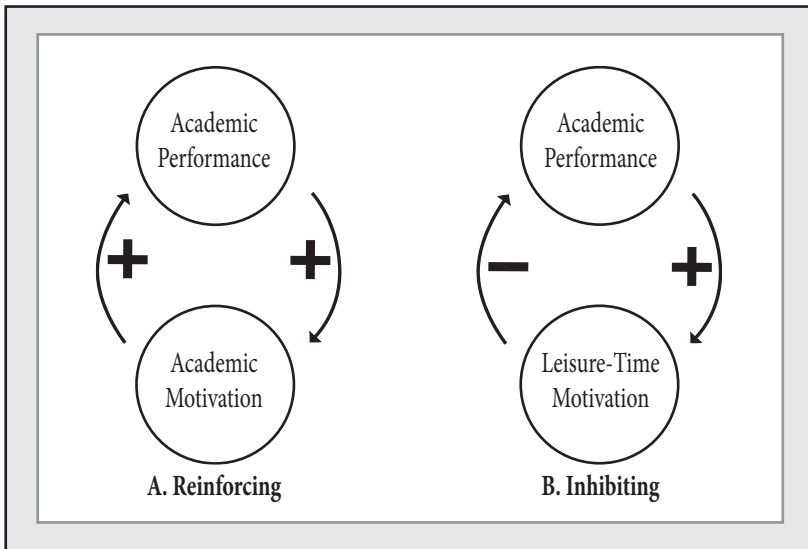
Source: Kunnen et al.; qtd. in van der Gaag, "Feedback"

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outer context under study could stimulate the student to explore and to reflect on new or maybe contrasting and enriching ideas, on related content (e.g., objects, literature, art), or on intrapersonal and interpersonal factors or strategies that will promote further in-depth understanding of the object under study. In contrast, the inhibiting feedback loop visualizes the academic performance of an individual student who is not or is less motivated to use the feedback of the facilitator and other students. This student will not be able to structurally add enriching content to his or her initial observations and may eventually stagnate in analyzing the dynamic interplay between the outer context and his or her own inner context. These interactions between components in the feedback loops in experiential learning like CAT reflect four overarching abilities that are well described by Kolb and further elaborated by Carvajal:

1. concrete experience abilities (immerse themselves fully, analytically, in new situations);

2. reflective observation abilities (assimilate new experiences from a transdisciplinary perspective);

3. abstract conceptualization abilities (integrate different and perhaps conflicting observations into a cohesive network); and

4. active experimentation abilities (apply the abstract concepts of such networks to make decisions and solve problems).

The sixth assumption is that the potential for self-organization occurs through the interaction of components within a system (individual student or groups of students) (Kunnen et al.). Self-organization implies that elements such as emotions, actions, and thoughts can be considered as occurring at a lower-level timescale and that the constellation of these elements may self-organize into higher-level states (Kunnen et al.). In CAT, the selected components and their feedback loops are derived from the four abilities students need to develop through experiential learning. Consequently, at CT1 (CAT baseline or starting point) the interactions between components can be considered as lower-level processes, i.e., states.

Our hypothesis is that individual coaching, focused on promoting reinforcing feedback loops, will result in stable abilities in students. Figure 4 visualizes this process (van der Gaag, "Self-Organization").

Experiencing the development of context by adding others' experiences and views on the outer context in the iterative process (Figure 2) and receiving feedback that adds content and insights in this process (Figure 3) can finally lead to developing higher-order traits as shown in Figure 4. This iterative feedback process contributes to new insights, allowing the individual to use it as a step to a next level of understanding. Kunnen et al. describe this process as "the 'moving together' of 'interacting components' which 'self-organize' into 'stable patterns' which makes developing traits possible and that adds a next 'state' to the individual" (8). Translated to CAT, one way of developing traits is, for example, to dare to ask strangers questions because you want to know who lives in the area you are in (and to discover that most people are very willing to answer or talk with you). Another trait may be developing enriching knowledge about how cities develop, how people move through this part of the city, or how patterns in an area work. This self-organization process is applicable to the personal and educational backgrounds of students (i.e., dealing with a class of children, discussing a book) and will consequently lead to the development of different traits

FIGURE 4. SELF-ORGANIZATION
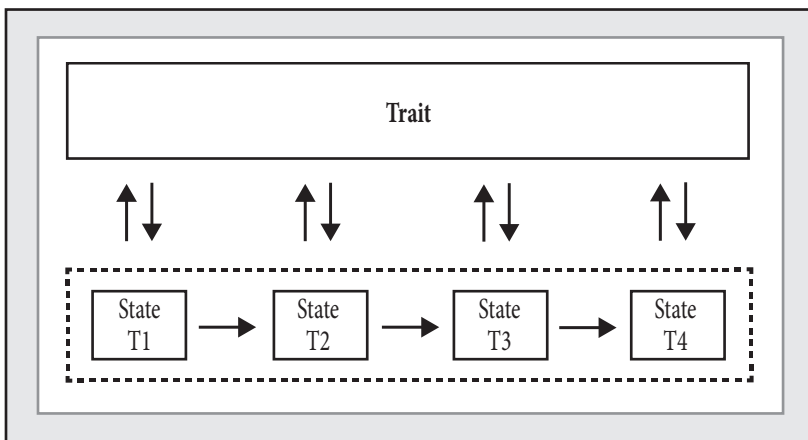
Source: Kunnen et al., qtd. in van der Gaag, "Self-Organization"

and "states" of individual students within CAT, which is one of its unique selling points.

Next, we propose a well-known Dutch coaching model that can help students in the process of core reflection on identified components and the associations between these components. Moreover, we discuss the role of the facilitator in this process and propose how facilitators can stimulate the transition from Adolescent T1 to Adolescent T2. The use of reinforcing feedback loops can eventually make self-organization possible by enabling individuals to see stable patterns in their actions or habits that may turn into traits.

STEPPINGSTONE 8A:

IN-DEPTH REFLECTION FOR THE CONSTRUCTION OF

REINFORCING FEEDBACK LOOPS

Figure 5 visualizes the "onion-model" developed by Fred Korthagen and Angelo Vasalos. This model provides a coaching framework for developing the four key CAT abilities. The model shows various levels that can influence the way a student performs based on the idea that the inner levels (mission, identity, and beliefs) determine how a student performs on the outer levels (competencies, behaviour, and environment) and that there is also a reverse influence (Korthagen and Vasalos).

If we want to feed and enhance the learning process of students, we need to reflect deeply and discover, as illustrated with the outer and inner contexts, the underlying layers in the participants. If we want the semi-structured method of CAT to be as explorative as possible and to give participants a view of possible perspectives on learning, students need to explore underlying intrapersonal and interpersonal factors that can lead to inhibiting feedback loops. Each layer is a step in the process of reflection and needs attention in order to reach the core: what is your "mission" in this course, activity, or life? The model allows us to work systematically from easy questions (what did you see today?) to more challenging questions (how does this connect to your personal ideas or values?).

The first and most visible layer is the environment in which the participant exists at this moment. Questions include the following: what did you see, how was it mapped, and what did you hear? These questions lead to relatively shallow observations, which are shared among all participants. In this way, all observations can become shared observations. If we connect this process with Figure 2 from the DSA, we can enlarge the observers' view of their initial environment. Maybe they missed some details that others did see and shared. This process can enrich and refine the outer context.

The second layer is behaviour: what did you do to stimulate your experience in this environment as much as possible? Questions

FIGURE 5. LAYERS OF REFLECTION

Environment

Behaviour

Competencies

Beliefs

Identity

Mission
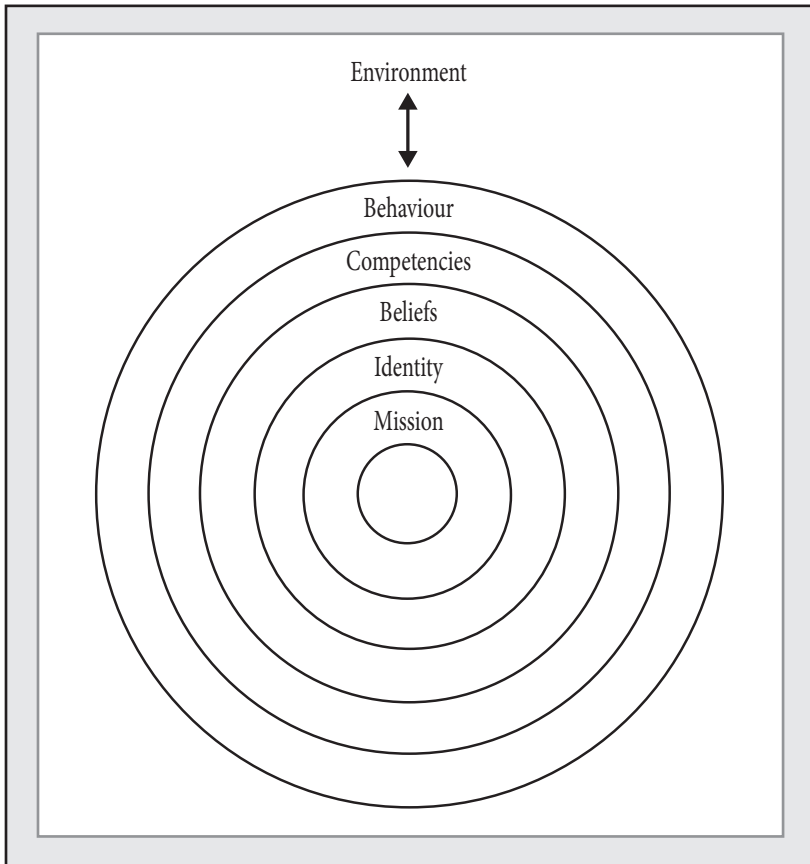
Source: Korthagen and Vasalos

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include the following: What actions did you take? Did you approach people, ask questions, observe closely, and maybe observe certain places or people for a longer time? How closely or critically did you look? These questions evoke how participants behaved in the environment and tried to get as much information as possible during their visit. The willingness to overcome shyness and approach people to get this information is an underlying building block in Figure 3 of the DSA and the reinforcing feedback loop A.

The third layer is competencies. We can start to recognize patterns in participants' behavior and actions, like daring to approach people on the street, asking questions, or getting into effective dialogue in the group during the walks. Participants can show different kinds of competencies in the group or in the feedback session afterwards. Stimulating them to speak about these actions and behaviors can make them aware of their own powers, or absence of them, compared to others. This awareness can in turn help them name these competencies more precisely, exchange their values, make them more explicit, or trace their value for activities in CAT and beyond. This layer is a process of creating awareness at different levels.

Until this point, reflection is still a group process; it takes place in dialogues among members of a group and can make all aware of their personal experiences. The sharing of these experiences and the sharing of the different layers can stimulate their personal growth. Connecting this idea to Figure 2 of the DSA makes it possible for participants to develop from AT1 to AT2 or even further, and it can also enrich their context: CT1 can develop to CT2 and maybe even further with the help of others' experiences. The actions of the facilitator in these layers are visualized in Figure 2 of the DSA by the arrows between Context and Adolescent: ask questions; clarify or make students clarify; stimulate aha moments; and draw students' attention to moments that are of specific value.

The next layers of the onion have more in-depth meaning for the individual and are more precise in their actions. Although they can also be performed in a group process, the facilitator now focuses on each individual's reactions in the process of reflection.

The fourth layer is beliefs, which usually become visible when participants add judgments or assign specific value(s) to experiences or observations. They can also be heard in the adjectives that give value to what was seen or experienced. Trying to clarify these adjectives, values, or judgments will reveal if the participant is in the DSA feedback loop A (Figure 3: reinforcing, adding to former experiences, expanding) or in feedback loop B (Figure 3: inhibiting, not seeing connections, maybe even rejecting others' connecting experiences). In this layer, the inner context is addressed, mostly unconsciously, through questions like these: What connections are made? What judgments (or self-judgments) are made, and where do they come from? What answers do you hear as facilitator? How can these answers be used to get the participant in the reinforcing feedback loop (A) to add experiences and other observations to their own and perhaps find leads for further research? This loop A stimulates the learning process and helps the participant reach the next phase of development (in DSA: Figure 2).

The fifth layer is identity. Here, the core questions are these: What does this experience mean to you as a person (or as a professional)? Does it influence you, and in what way, or if not, why not? How does it connect to your ideas, your values, or your deeper knowledge? In this personal approach, participants learn to know themselves better and to understand the relation between experiences and their ideas or feelings about these experiences. The role of the facilitator is to expose connections or values that the participant is not aware of. This layer can be difficult to address since not every individual will be aware of the constituting elements of their identity or will be able to address or talk about them, but if only one or two aspects of this layer can be addressed, it can be considered as a milestone because it will give participants insight into their own deeper reasons and judgments. These insights may well lead to the "turning point" essays of participants in CAT.

The final, deepest, and most difficult layer is the mission, which is the core of the onion. The mission addresses why you as a person or professional are on this earth. What are your deepest reasons and what really drives you? What inspires you to do what

you do? Because this layer involves personal pathos, it is difficult to give examples of questions that might reveal aspects of this personal mission, but facilitators should be aware that some aspects might pop up and should shine a light on this deepest core of the individual.

Some students might have a mission to strive for a better understanding of how cities can contribute to greater sustainability. These students will probably use the outer context to connect more deeply with this mission by focusing on observing small tokens of sustainability in their walkabout: they will observe "green" or sustainable measurements in streets or neighborhoods. Maybe these students are planning to use their observations to improve the quality of sustainability in their direct living area. These reflections on personal missions can be explored more in-depth in dialogues between the facilitator and students, possibly using other layers of the onion as well.

The first three layers—environment, behaviour, and competences—are most visible in our daily lives. The other three layers—beliefs, identity, and mission—are the deeper layers. These layers determine people's behaviors and competencies and the way they observe and reflect on the outer context. Although we are not always aware of what is stored in the three deeper layers, they are, in fact, of greatest importance for the things we do and how we do them.

STEPPINGSTONE 8B:

REFLECTION INTEGRATED FEEDBACK LOOPS

Connecting to CAT and to the feedback loops, we hypothesize that the meaning students assign to the object of study will probably determine the nature of the feedback loop (A or B) and will probably also influence to what extent they are willing to explore the deeper layers. For instance, when students are touched, triggered, or intrigued by the object of study, we hypothesize that they will proactively explore all the layers of the model (Figure 6; feedback loop A). As a result, students will feel like they flow in a continuous, creative, and flexible learning system in which they

willingly reflect on and integrate all kinds of feedback and content, potentially leading to self-organization. Consequently, by integrating a broad variety of perspectives, students will enrich their initial observations. If this happens, we can conclude that the assignment was successful. In contrast, when students are discouraged by their object of study, we hypothesize that students will reflect feedback loop B, in which reflections on the deeper three layers are less present or not connected to students' learning processes, resulting in stagnation of self-organization. In this case, the assignment was not successful. These contrasts are demonstrated in Figure 6.

An important question for facilitators is how students can be encouraged to move from feedback loop B to feedback loop A. First, facilitators should be aware of the different layers addressed by the student and what feedback loop is in that dialogue. Next, according to the underlying theory of this reflection model, students should be more willing to broaden their reflections on the object of study

FIGURE 6. COINCIDING FEEDBACK LOOPS FROM DSA AND KORTHAGEN AND VASALOS'S LAYERS OUTSIDE IN
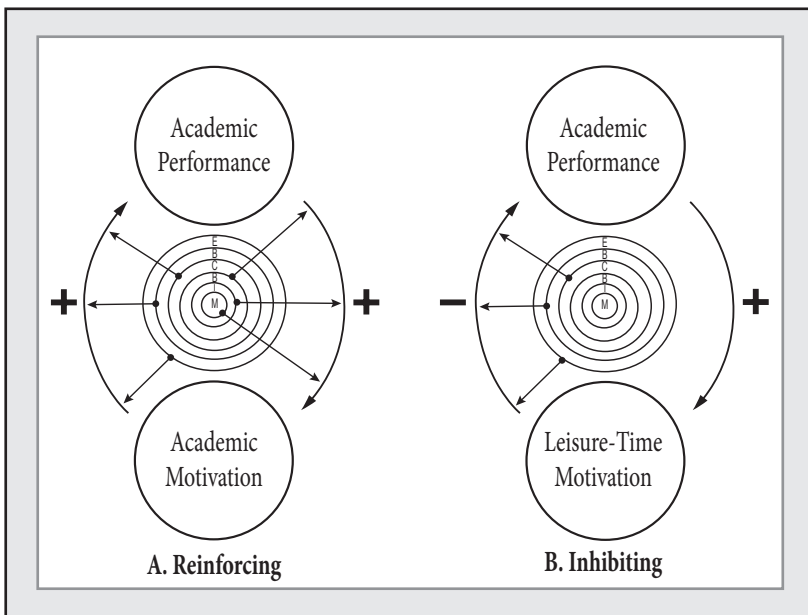
E = Environment; B = Behaviour; C = Competencies; B = Beliefs; I = Identity; M = Mission.

when they are encouraged to address the inner layers of their reflections (Figure 6; see M = Mission, I = Identity, B = Beliefs). The role of the facilitator is to ask questions that will activate the student to explore perspectives that might better integrate with the inner context of the student. Finally, facilitators should always be alert to participants' interpretations of the object of study, which can range from the obvious to the unexpected.

CONCLUSIONS AND DISCUSSION

This paper examines the integration of the DSA in standardized reflection processes for the CAT teaching method. The DSA offers in-depth insights into how reflection in CAT can be enhanced and used in a wider context of the developmental processes of our students. We also have introduced the practical Korthagen and Vasalos model of reflection to demonstrate how this process can be performed. Both the DSA and the use of the model will strengthen teachers' ability to act in the reflection and feedback process in CAT. These models give us a deeper insight into how reflection and feedback can be effective if the facilitator knows how these processes work and what happens during each stage of the process. We also have added value to the reflection process in general, which, in our view, tends to focus increasingly on the important individual development of our students. Therefore, with these models the term "City as Text" can also be read as "Class as Text" in relation to children or "Book as Text" in relation to close reading, and other complex subjects of debate, discussion, and deeper study in which beliefs and socio-cultural archives are important.

The next steps on these models should be how they can be transformed to pedagogical models and pedagogical interventions in class to make them even more effective in regular education. We must develop training material to improve teachers' knowledge of these integrated models. Following the steppingstones is important to ensure that all the steps are executed, but flexibility is needed to ensure that the right components for each student are addressed. It might be interesting to develop this training program in a co-creation process during a CAT semester for educators: developing

while experiencing the process. Both the DSA and Korthagen and Vasalos model and their interplay should be the subject of evaluation during this co-creation process. Another focus of research could be the meaning of the bidirectional circles in Figure 3 in the Korthagen and Vasalos model: Which "components" can be subject for reflection, and how can we use the circles in contact with our students as effectively as possible? This bringing together of the DSA and the Korthagen and Vasalos model adds more depth and meaning to Kant's notion of understanding the interplay between mind and world. With this understanding and this bringing together, we have provided a guide for facilitators that they can use to explore mind and world together with their participants: to explore the interplay between the inner and outer context for supporting the development of the self in context.

AN AFTERWORD

Working on this text and introducing the DSA in combination with the Korthagen and Vasalos model challenged me to review how this all started: the Notre-Dame de Fourvière in Lyon. Is it indeed "ugly," or did I miss something? Why do I see this building as an outlier in the European architectural history of churches? This church does not in any way resemble the cathedrals we know in Chartres, Rheims, or Paris; so studying Pierre Basson, the architect of the Fourvière, I discovered that he was inspired by Byzantine architecture, mostly known from the East Roman Empire <https://www.fourviere.org/en/discover/history/from-the-construction-of-the-basilica-to-the-present-days>. Shortly after a visit to Sicily, he made his first drawings of this church in 1849. Even for those times, the choice of a Byzantine basilica was unusual. At the beginning of the nineteenth century, the neoclassical building styles in Europe were appearing, and architects looked back to ancient Greek and Roman architecture as "pure" styles. In that sense, the choice of the Byzantine tradition is an outlier. On the other hand, southern Europe was influenced by Byzantine architecture through its intensive contacts in trade and sometimes wars or occupation. From that viewpoint, Basson, experiencing this building style in Sicily as "special" and

having the opportunity to produce a neo-style in Lyon, used it to make it an "outstanding" and striking church in Lyon. And that it is: "the massive exterior of the Basilica (built 1872–96) symbolizes the strength of the faith of Our Lady. The visitor enters into the light of faith by moving from the symbolic darkness of the outside world into the Basilica's brilliantly lit and richly decorated interior" <https://eymardianplaces.com/lyon/notre-dame-de-fourviere>.

Do I like or appreciate the Notre-Dame de Fourvière more now that I know more about the personal mission, the identity, and the beliefs of Pierre Basson? Well, let's say I understand more about this church, its place in the personal history of the architect and in architectural history. Through this knowledge, I have expanded my architectural library and knowledge about this outer context. Consequently, I would change my judgment from "ugly" to "outlier." The church is one of the northernmost examples of a Mediterranean architectural and social history. My knowledge of this history is too limited to judge if this church is a special example of this history as Chartres is for the Gothic period. It is also not very helpful that the Lyonnais named the church "the elephant on its back." At the same time, whatever I do or do not know about the church, it is and will always continue to be a place of worship.

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