РАЗДЕЛ III. ПРИКЛАДНАЯ ЛИНГВИСТИКА
SECTION III. APPLIED LINGUISTICS

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Schematic knowledge deviation: delving into the depths of reader's cognitive pathways

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Abstract. This paper is an attempt to show how readers' underlying network of prototypical schematic expectations might be activated at different levels to address schematic/ cognitive challenges. When these levels of detail are activated, a cognitive defamiliarization process occurs as a result of schematic deviation. With varying degrees of under-/over- specification, this sort of cognitive deviation raises up certain levels of schematic instantiation. Consequently, a schematic challenge might merely require the reader to retrieve unexpected levels of information from their already-existing schematic toolbox rather than changing or bringing in new schemata. 'Inferno', that of Dante Alighieri and that of Dan Brown, presents this cognitive challenge to readers' schematic knowledge in a way that is inextricably linked to the fundamental creative elements of the fantasy fiction genre which both works belong to. However, the *Schematic Knowledge Deviation* (SKD) that occurred in both novels is stated by triggering the most well-known and accessible levels of the standard elements in a schematic specification. This has been proven and demonstrated using Cmap Tools, which intuitively depict the most typical and markedly exhaustive levels of detail or pathways generated by readers. SKD, hence, has its own side effects on the linguistic level and has been measured linguistically via WordSmith Tools, specifically via the TTRs counted for the textual samples this paper deals with.

Keywords: Cognitive (Mind) Stylistics; Schematic Deviancy; WordSmith Tools; Type/Token Ratio; Schema Theory; Cmap Tools; Linguistic Side-Effects

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1. Introduction

When the subject matter becomes cognitively complicated and the inferno in literature is abstract and disconnected from reality, it cannot provide readers with creative inspiration or recognition. In other words, readers may need to determine not only what schematic information is triggered in a given textual area but also whatever levels of

detailed information the schema specifically brings to mind and why.

As a result of the interplay between the reader's schematic knowledge and the language of a literary text being processed while reading, SKD results from such an interplay. This interaction creates a kind of conceptual challenge for the reader's background knowledge, which is a key characteristic of literary texts to cause schematic challenges right through the process of literary recognition.

Additionally, the idea of a schema appears to be closely tied to the idea of an expectation in that every single schema a reader encounters is compared to its stereotyped form that has already been embedded in the reader's memory (Brown et al., 1983: 236).

This sort of schematic expectation in literary works can be missed or diverted in terms of the degree of information in one of two ways: either by causing an abnormally too extended detailed information or an unusually reduced and under-extended detailed information. As a result, the reader's expected degree of information is not provided in the textual samples of the narrators, but implicitly recovered.

In light of this, the following research questions are raised to bridge the related gap in the literature:

1. What are the linguistic cues that determine the mental processes and mechanisms the two novelists utilize to create their literary language?
2. What are the schematic specifications readers activate to reach over- or underspecified interpretations of the literary texts?
3. In what ways can these specifications be presented and drawn visually?
4. What are the linguistic side-effects resulting from the SKD?
5. How can the linguistic side-effects measurement be used as an index of schematic knowledge deviation, and thus identifying the degree of deviancy?
6. Why does the schematic challenge trigger unexpected levels of detail within the reader's pre-existing schematic toolkit?

2. Literature Review: Cognitive Stylistics and SKD

Cognitive Stylistics (henceforth CS) or mind stylistics is a relatively new, massively important, and upgraded growth, possibly the most recent, in modern stylistics (see Ghazala, 2011: 25). According to Boase-Beier (2006: 10), cognitive stylistics considers context to be a cognitive entity that involves a consideration of sociocultural factors. Saying a statement as simple as "environment shapes the brain", may be true of all experiences (Phillips, 2005). This means that context is viewed as a cognitive entity in CS, involving various knowledge about institutions, text-genre sociological roles, as well as (time and place) settings. It is based on the interaction of the individual, his/her cultural, and/or universal aspects (Semino, 1997: 8).

However, mind stylistics is most productively examined in texts where the variety of potential structures or cognitive habits make a significant contribution to create certain interpretations of what humans read (Hoover, 2016: 327). Within the same ground, the process of inferring character from text is influenced by cognitive frameworks and inferential structures that people, who are engaged with reading, have already created (Culpeper, 2001: 10). CS does not so much end up replacing other existing methods of analysis as it shifts the emphasis away from textual and analytical models toward cognitive/conceptual models (Boase-Beier, 2006: 12). Rather, these models explain the connections between the mind and the way people process the text in reading.

Needless to say, CS considers meaning as if it is constructed by human minds rather than autonomous from thought (ibid). Put simply, it has combined pragmatic consideration with context consideration as a cognitively relevant dimension (ibid: 16-19).

Moreover, MacKenzie (2002: 6) views language as a combination of both a common

background/ knowledge and simultaneously a reflection of a speaker's mind. This is due to the dynamicity of language inherited in every speaker's mind (Vandepitte et al., 2018: 360). According to Boase-Beier (2006: 75), recent contributions of cognitive stylistics explore the way mind style works (i.e., mind acts as a mediator between both the world people live in and the text they interact with when reading). In this regard, Iser (1978: 34) sees mind style in the text as kind of a textual information triggering the presence of such, using Fowler's (1977: 33) term, an 'implied reader' (i.e., the reader's own perspective).

As for Cook (1994: 4), he correctly states that literary textual discourse does have an effect on minds, stimulating or modifying our mental views of the world. A text is, therefore, thought to be organized into previously existing conceptual frameworks that people who read have constructed via a combination of innate and adaptive immunity of knowledge (Verdonk, 1999: 296).

Stockwell (2002: 76) further describes the cognitive position on the issue that the reader is endorsed as a result of changes happened to occur in deictic position mirrored in the text. As a result, the textual discourse is mentally rich representations triggered by the text and beholden to the various interpretations of the readers (Nuttall, 2018: 55).

To sum up, CS is indeed a unique way of analyzing, interpreting, and gaining insight about discourse, together with literary discourse. It seems to be using the mind as the cornerstone for whichever stylistic proposed methodology in hand. CS holds a detailed account for how readers recall on their knowledge stores and how they can draw abstract exchanges among those stores. Subsequently, an alternative technique, i. e. Schematic Knowledge Deviation (SKD), acts as a conceptual tracking, an activity, and model derived from schema cognitive theory. It has been created by stylisticians to portray a watershed moment in cognitive stylistics. This indicates that such a use, like that of the schema framework, marks a significant switch in stylistics.

2.1 Schema Theory and Cognitive Schematic Challenge

Schema, as a concept, was first initiated by the British Psychologist Sir. Frederic Bartlett in 1932, and later established by the American psychologist Richard Anderson in 1990, along with several other authors, as stated by Rumelhart (1980: 33) who defines schemas as "building blocks of cognition" and "skeleton around which the situation is expounded" (ibid: 37). According to Semino (1995: 3), it was Bartlett who first used the word schema to mean "a prior knowledge", and the one who characterized it as a basic organizational unit of background experience. Within the same ground, McIntyre (2006: 48) claims that humans' comprehension of specific events, activities, and scenarios is characterized by the amount of prior knowledge they have in mind. This is known as schematic knowledge, and within it there is a schema, which simply refers to a complex unit of that knowledge relevant to a specific person, event, activity, or situation (ibid).

Defining it as an "abstract general representation", Taylor (2018: 15) portrays schema as an instance subsequently filled by certain details to come up with well-formed information. Schema can be identified as "conventional knowledge structure that exists in our memory" (Yule[1], 2010: 150). If you want to tell anyone about any school in your area, you, in this case, do not have to mention certain things like: there is a class in that school, students, teachers, chairs, boards, desks, etc. This is because all these pieces of information already exist in the background knowledge shared between you and the one you are talking to.

From this example, it is obvious that schemata are conceptual frameworks that represent knowledge, including such concepts as objects, events, situations, and actions, all humans have in mind. These schemas can

[1] Yule, G. (2010). *The study of language* (4th edition), Cambridge University Press, Cambridge. *(In English)*

then be used not only to recognize something, but also to predict events of the surroundings. Pieces of information that do not fit into human mental schema may not be fully grasped. This is why readers struggle to understand a text on a subject they are unfamiliar with, hence a schematic challenge will occur.

Speaking of this challenge, Tavakoli (2013: 303) asserts that whenever readers encounter the word *restaurant*, for example, they gain access to their schematic knowledge (which may include waiters/waitresses, meals, menus, a bill, a chef, glasses, napkins, and so on). That is, it allows readers to expect events and ideas that may take place later in the text (ibid).

However, this expectation is subject to deviation: i.e., readers' "desired knowledge schema" may differ from their "current knowledge schema" (Gong et al., 2018: 134).

According to Culpeper (2014: 132), this deviation is referred to as "unexpected irregularity (breaking of norms)". Trying to deal with this deviation and its relevance to the study and analysis of textual interpretation, readers engage themselves with the text they read by using their expectations based on their general knowledge of world schemata (ibid). As a result, another term of such a deviation should be mentioned. In this case, G. Cook (1990, 1994) uses the term *Discourse Deviation* to identify the disturbance of readers' established schematic knowledge throughout their engagement with textual language, especially literary texts.

In her article, *A Cognitive Stylistic Approach to Mind Style*, Semino (2002) schematically examines the eccentric character, Alekos, in Louis de Bernieres' Captain Corelli's Mandolin as a clear example of how the traits (e.g., linguistic cues) of the text work and deviate from the expected norms readers may reach as interpretations.

Since the current paper deals with SKD and it does indeed have a cognitive relativity with the so-called Mind Style, it returns to the novel that Semino (2002) has analyzed to determine what *linguistic cues* Alekos uses to be later recognized within the wheel of SKD.

Handling such a novel as an example, readers first meet Alekos; a shepherd who has spent much time on Mount Aenos looking after his goats without any contact with people. During WWII, however, he was working on the mount and saw distant searchlights and flashes every night. Unexpectedly, a soldier with a parachute lands on the Mount, holding a radio and some weapons, as well as hand grenades. Readers who dig deep into the novel will notice a series of rather humorous misunderstandings, such as *The parachute*, regarding our friendly character Alekos, is a mushroom, *the soldier* is an angel, *the radio* is a metal box or engine, and *the grenades* are iron pine cones.

Focusing on the text's linguistic cues or "headers," such as parachute, soldier, radio, etc., will prompt readers to "activate certain schemas" (Giovanelli and Mason, 2018: 72). This is due to the fact that many headers are extremely vague. They, in turn, suggest lots of possible schemas that readers might need to activate in order to make sense of the scene (ibid). Back to Alekos, he is deficient in certain schemata (e.g., for parachutes, radio communication and modern weaponry). Failures or errors in comprehension can result from a lack of certain schemata relevant to the processing of a specific stimulus.

More precisely, a lack of proper schemata or conceptual frameworks leads to 'deviations' when readers attempt to achieve a desired interpretation of the text they read. More pertinently, Alekos' individual way (mind style) of dealing with the natural surroundings is all about attempting to make sense of uncertain objects that he is unexpectedly presented with (see Semino, 2002).

This can be viewed as a cognitive habit that characterizes his mind style. The question why Alekos has certain failures or SKD can be attributed to some obvious aspects of the stranger's (the soldier's) appearance and behavior: the way the soldier floats down from the sky that humans, according to

Alekos' prior knowledge, cannot do, plus the white clothes soldier puts on. This implies that Alekos' entire world view has been deviated as a result of what he has experienced about angels, perhaps from stories he has listened to and photos he has already seen.

2.2 SKD as a Cognitive Stylistic Marker

Drawing a mental representation of a real-world pattern (or certain elements of it) incorrectly leads to failures or deviations that are even worse in terms of an individual's schematic knowledge. These are issues of pattern-oriented design validation; one may measure the cognitive usefulness of a pattern representation by essentially evaluating whether real-world structures truly express the specified pattern or not. Such an issue is left for linguistic researchers, and it might go even further to address a very challenging question: How can one measure the accuracy of a schema?

Individual judgments on whether a schema is acceptable or unacceptable is one of the obstacles in measuring accuracy. This might be because of the nature of human mind, which creates schemata for all sorts of recurring schemas, even the very inappropriate ones. Such schemas are deemed to be "anti-patterns" or "dysfunctional patterns" (Buschmann et al., 2007: 40).

Taking the CAR schema into consideration, one can understand what may go wrong with information extraction, both informally and formally. Initiating an individual's CAR schema, s/he may claim that a car basically has *four tires*, *a driver's seat*, *passenger seats*, and *a body*. These sub-schemas may leave out certain key components.

As a matter of fact, such a configuration is indeed a recurrent structure established in all (cars), and hence is a potential schema an individual automatically chooses as an optimal candidate. The challenge here is that this four-part schema (the car) is woefully inadequate. It lacks essential parts like the *steering wheel, brakes, engine, fuel tank*, and many others. In other words, a *car* is not much of an appropriate type of schematic pattern to be chosen if it doesn't have *brakes*. One may be aware that a car needs certain schemas yet fail and/or deviate to make this clear.

Going deeply to dig up CAR schema details, another reader solely sees cars with gear sticks. S/he may determine that the stick is part of the car schema. However, cars with sticks are no longer exclusively an option; automatic vehicles are now available, in addition to robot cars. The same goes with car's trunk. A car without the need for a trunk is still a car, therefore the trunk is just an optional element. If the individual just saw cars on roads, like all people did, one might argue that roads form a component of the CAR schema. But they are not, are they?

Cars, in fact, can exist without roads, and roads do not solely service cars. ROADS are an isolated schema that occurs frequently in combination with cars. As a result, CARS ON ROADS is undoubtedly another schema because it is so convenient to drive on roads. Nevertheless, in the individual's mentality, cars and roads may be connected. For this individual, roads have always been part of his/her CAR schema, existed implicitly in his/her mind.

Furthermore, determining the proper abstraction degree is challenging. There should be a matter of wondering if there exists a broad class of vehicles or whether each unique car category should be regarded as a distinctive schema. Take a race car and/or a family van as an example, they both have numerous similarities but also considerable distinctions. What if the matter goes differently to deal with trucks, ambulances and even busses? Each of them represent distinct schemas, yet they are essentially varieties of the CAR schema.

The same can be applied to literary works. While reading a literary text, readers' schematic knowledge may be deviated,

leading to cause "unusualness" (Scarinzi, 2008: 144). Working hand in hand, *schema theory* and *cognitive stylistics* with each other give an indication that the unusualness and/or deviation can be identified as a cognitive stylistic marker applied to the schematic knowledge of readers. Schema deviation is a keystone of literariness, at least of what is ordinarily interpreted to be aesthetically valuable literature. It covers all types of schemas, including world schemas, text schemas, and language schemas. Hence, readers' background/ schematic knowledge configurations about the world, as well as the association and patterning of discourse, are likely to be affected (Piata, 2016: 232).

The reader is more inclined to correct schema deviation by trying to accommodate his/her currently existed knowledge resources and correlations of discourse processing if s/he is genetically programmed to such a deviation. "If left unresolved, however, schema [deviation] may lead to confusion and fuzziness" (ibid).

Finally, choosing an ideal schematic level relies somewhat on specificity appropriate for the intended group. If a schema dives deeply further into details, it is beneficial to characterize each object as a standalone schema. Consequently, many versions might have to be incorporated and listed in one large basket of description. On the contrary, if the chance of these versions is little, each variation will count as a new schema causes schema explosion or *schema-refreshing*. The latter may enter the zone of deviation, and hence this new schema probably fails to satisfy the basic objective of the designed patterns (i.e., already existed schemata).

Rounding off this section, schema theory is an effective way for explaining why different readers produce different interpretations of the same text. To this end, schema theory can be applied cognitively to deal with SKD of the literary texts, and thus can be used as a *cognitive stylistic marker*.

2.3 Schematic Levels of Detailed Information

Instantiating a specific schema depends highly on retrieving it from readers' memories as a separate unit and applied to a specific additional explanation level within such a recovered unit. Schematically speaking, the selection of a fixed level of schematic clarification or of default details may be deficiently described (see Cook, 1995: 76). Thus, every schema integration appears to be broken and expanded between two edges: schematization – more abstract concepts and explanation – more specified details (Tabakowska, 1993: 37).

However, a schema is composed of a network of numerous configurations and levels of schematic detail. Due to the hierarchical nature of the schema instantiation thresholds, a very challenging dichotomy is quite relative in this regard. This dichotomy holds two unusual directions: overextended levels of detail or underextended level of detail (see 4.3 below). And hence, a schematic instantiation on a "higher level" may in itself become a schema for "lower level" instantiations", and so on (Tabakowska, 1993: 37).

Subsequently, a schema may appear to be a focal point at a certain level of abstraction and explanation. This is done according to which levels of instantiation can move in two opposite paths: either towards less interpretation or towards more interpretation. Specifying the main point of this paper, it is argued that the schematic challenge can be introduced into some literary works obviously by *disrupting* or interrupting the very expected and biased level of detail that is regularly ignited within a particular conceptual framework (i.e., schema). The argument is that the reader must sometimes determine not only which schematic knowledge is activated in this or that text-based area, but also which level of detail the schema distinctively initiates and why.

When it comes to works of literature, this sort of schematic expectation/ background could indeed be disrupted and failed in two directions: either by activating abnormally unlimited and overextended levels of detail or by activating uncommonly limited and under-extended levels of detailed infromation. In either case, the reader does not receive the expected level of information, so a *schematic deviation* will take the lead.

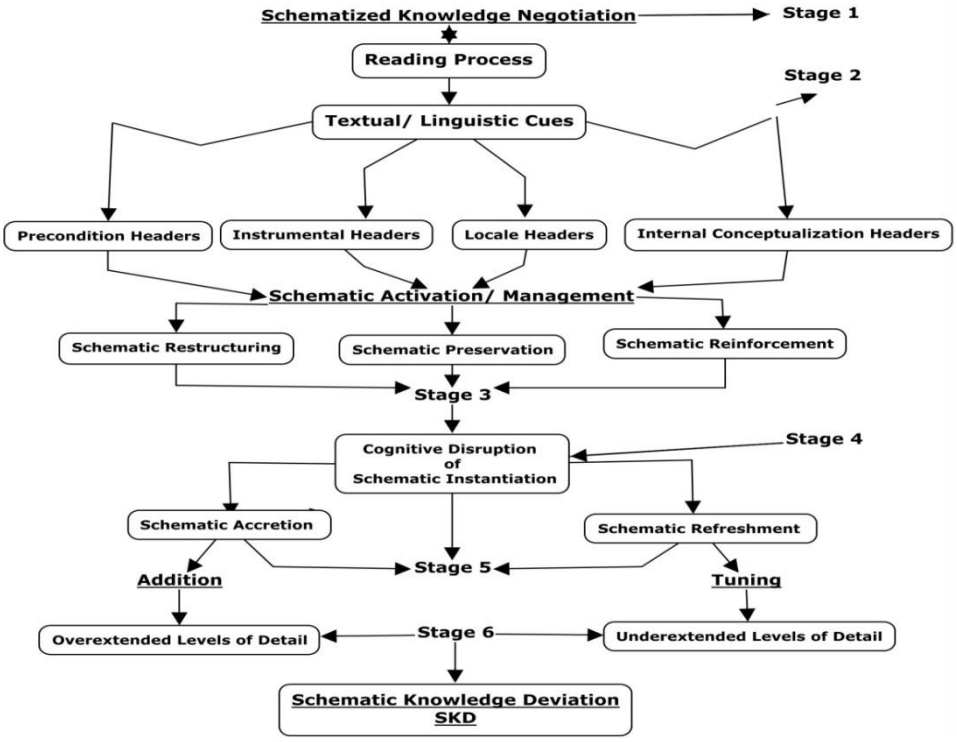
3. Material and Methods

3.1 Schematic Deviancy Model

Cook's (1995) *discourse deviation*, Stockwell's (2002) *assimilation of schematic management*, Semino's (2014) *classification of textual headers*, and most importantly *the levels of detail a reader may expose*, can all help figure out the responsive potential outcomes of de-familiarization much further than text analysis. Text processing, not just text analysis, is hindered by de-familiarization. In a literary text, what may be managed to bring to de-familiarization is not only a linguistic component, but additionally a conceptual or cognitive component. As a result, the de-familiarized cognitive component is identified as such as a matter of fact of the cognitive deviation it provokes against the scope of regular expectation readers habitually use in text processing.

Putting all these models in one basket, *Schematic Deviancy Model* now can take its own defining characteristics. Shaping it to have its accurate definition, it is all about *a multidimensional construct wherein linguistic and structural deviations in a text document are closely linked to conceptual or schematic deviations formulated in the reader's schematic knowledge*. That is, a linguistic deviation (i.e., the output) must directly correlate with a deviancy at the cognitive level of readers' schematic knowledge (i.e., the input). Figure (1) below clearly draws Schematic Deviancy Model which is designed by this study:

Figure 1. Schematic deviancy model



According to the diagram above, readers are engaged with the text based on the author's textual words when reading. They are, in fact, able to negotiate their schematic knowledge with the author's textual words (Stage 1). Linguistic cues are these textual words. They play a critical role in activating and managing readers' schemata stored in their memory (Stage 2).

To reach the schematic activation/management area, all readers would go through three established processes (Stage 3), which are identified as follows:

1. Schematic Restructuring: during reading, readers refine new schemas based on their pre-existing knowledge templates. –

2. Schematic Preservation: as readers continue to read, they would learn more facts from the text (e.g., a literary work) – facts that only fit their existing schematic knowledge.

3. Schema Reinforcement: continuing reading and being engaged intensely in the text, readers would enhance incoming facts. As a result, their schematic knowledge will be strengthened and confirmed.

Moving on to the next area (Stage 4), cognitive or *conceptual deviance* here poses a potential challenge to readers, disrupting their schematic instantiation. Such a challenge can be managed in two distinct ways (Stage 5): *schematic accretion* (i.e., readers here add more new facts to their schematic knowledge in order to broaden their explanatory range) or *schematic refreshment* (i.e., here, readers modify the facts or relations with a particular schema). Reaching stage (6), *schematic accretion* would give overextended levels of detail (unlimited or generalized levels). As for *schematic refreshment*, it would provide under-extended levels of detail (limited or specified levels). In either case, a total change or deviation will undoubtedly occur to the readers' configuration of schemata.

3.2 Sampling Methodology

Most linguists, in general, might very well prompt their great attention forward into non-probabilistic sampling procedures while sampling their own data. Sequential sampling is one of these procedures (see Hussein and Al-Sahlani, 2019: 99). It refers to a non-probabilistic sampling technique in which the researchers choose one set or group of raw materials at a specific point in time, investigate them, interpret their results, and then choose another set of materials if needed. Such a technique affords the researchers with an infinite number of possibilities to modify their methodological approach and obtain a critical perspective on the study they are constantly seeking for (ibid: 100).

As a matter of fact, sequential sampling provides the advantages listed below:

1. When using this sort of sampling, the researchers have the entire authority over the length of the samples. Depending on the researchers' decision-making process, the sequence of text-based samples may be fairly short.
2. Because of the frequency in which this sampling procedure is used, it allows the researchers to enhance the research methodology, interpret the results, and end up making minor adjustments and improvements to rectify and refine the research methodology.
3. Using this sampling technique, the researchers would then dedicate teensy time and effort in sampling his data since it is not complicated, time-consuming, or necessitates an extensive workforce.

Taking the benefits mentioned above into consideration, this kind of sampling procedure is applied throughout this paper for analytical purposes. As a result, we select our digital samples sequentially. More precisely, we select the opening lines of ten chapters extracted from the two Infernos, see Table (1) below:

Table 1. Data description of the two Infernos

Sample NO.	Dante Alighieri's Inferno[2]	Dan Brown's Inferno[3]
	The Opening Lines of the Two Infernos Taken from the First Ten Chapters	
1	MIDWAY upon the journey of our life, I found myself within a forest dark, For the straightforward pathway had been lost. Ah me! how hard a thing it is to say. What was this forest savage, rough, and stern, Which in the very thought renews the fear.	I AM THE Shade. Through the dolent city, I flee. Through the eternal woe, I take flight. Along the banks of the river Arno, I scramble, breathless turning left onto Via dei Castellani, making my way northward, huddling in the shadows of the Uffizi. And still they pursue me.
2	DAY was departing, and the embrowned air Released the animals that are on earth From their fatigues; and I the only one. Made myself ready to sustain the war, Both of the way and likewise of the woe, Which memory that errs not shall retrace.	The memories materialized slowly, like bubbles surfacing from the darkness of a bottomless well. A veiled woman. Robert Langdon gazed at her across a river whose churning waters ran red with blood. On the far bank, the woman stood facing him, motionless, solemn, her face hidden by a shroud.
3	THROUGH me the way is to the city dolent; Through me the way is to eternal dole; Through me the way among the people lost. Justice incited my sublime Creator; Created me divine Omnipotence, The highest Wisdom and the primal Love.	I'M IN FLORENCE!? Robert Langdon's head throbbed. He was now seated upright in his hospital bed, repeatedly jamming his finger into the call button. Despite the sedatives in his system, his heart was racing.
4	BROKE the deep lethargy within my head. A heavy thunder, so that I upstarted, Like to a person who by force is wakened; And roundabout I moved my rested eyes, Uprisen erect, and steadfastly I gazed, To recognise the place wherein I was.	Five miles off the coast of Italy, the 237-foot luxury yacht The Mendacium motored through the predawn mist that rose from the gently rolling swells of the Adriatic. The ship's stealth-profile hull was painted gunmetal grey, giving it the distinctly unwelcoming aura of a military vessel.
5	THUS I descended out of the first circle. Down to the second, that less space begirds, And so much greater dole, that goads to wailing. There standeth Minos horribly, and snarls; Examines the transgressions at the entrance; Judges, and sends according as he girds him.	For an instant, Langdon felt as if time had stopped. Dr. Marconi lay motionless on the floor, blood gushing from his chest. Fighting the sedatives in his system, Langdon raised his eyes to the spike-haired assassin, who was still striding down the hall, covering the last few yards toward his open door.

[2] Alighieri, D. (1867). *Devine Comedy-Inferno,* (L., Henry, Trans.). Creative Commons. (Original work published 1314). *(In English)*

[3] Brown, D. (2013). *Inferno,* Bantam Press, London, UK. *(In English)*

3.3 Research Procedures

Exploring the ways of collecting, modifying and analyzing the textual data of this study. The following items are the major procedures this paper has built its bases on:

a. Designing:

designing the developed schematic deviancy framework (see Sec. 3.1) based on a very interesting dichotomy (i.e., over-specification and under-specification dichotomy). Such a dichotomy might be initiated unexpectedly by any good reader when reading the two Infernos and/or their opening lines. As for designing the data, they have a sense of reliability. The latter is achieved through authentic investigation, as what follows:

1. The researchers firstly downloaded the required data from the most authentic and reliable website, see www.gutenberg.org.
2. After making sure that these digital texts are the exact copies of the original ones, they are segmented into (10) samples. Each sample holds an approximate number of tokens around (50)[4] tokens.
3. Finally, these samples are transformed from Portable Document Format (PDF) into Plain Text Format (TXT) so that our user-friendly software application (WordSmith Tools) would accurately do its job.

More importantly, two very trustworthy sources have been used to identify the opening lines of the two Infernos. These are the critical notebooks of Dante's Inferno by James Roberts and Nikki Moustaki (2001) and Brown's Decoded Inferno by Michael Haag and Greg Ward (2013). The two notebooks were used not only to figure out the size of each sample, but also to support what the two novelists claim and what possible interpretations readers may get during their reading of the novels at hand.

b. Unitizing:

identifying the different levels of detail resulted from the textual headers that the two Infernos provide.

c. Sampling:

selecting the data samples qualitatively and representatively and dividing up the samples in terms of a non-probabilistic sequential sampling method.

d. Reducing:

since they are bulky and large in size (i.e., Dante Alighieri's Inferno holds 377 pages; Dan Brown's Inferno holds 262 pages), the data at hand have been reduced to deal only with the opening lines of the ten chapters extracted from the two novels. Such a procedure helps the researchers understand the emerging cognitive patterns and concepts of what a reader might expect using his/her schematic background. Thus, the schematic deviation of the two Infernos will be identified.

e. Graphical Sketching:

data analysis will be cognitively and graphically visualized in terms of a software program created by the Florida Institute for Human and Machine Cognition (IHMC), known as Cmap Tools.

f. Calculating:

Since the cognitive deviation occurred at the schematic level has its own side-effect on the linguistic level, the outcome, resulted from Cmap knowledge toolkit, will be quantitatively calculated via WordSmith Tools. This study will specifically calculate the TTRs occurred in each sample so that the researchers will be in a position not only to compare the TTRs obtained from the textual samples before and after data analysis for the sake of identifying the most luxurious novel in terms of its textual header, but also to measure the degree of the linguistic side-effects—resulted from the schematic knowledge—scored in each novel.

[4] The data under consideration are not corpus-based or extensive. Instead, we are exclusively working with the opening lines extracted from two novels, distributed across a total of (10) samples. This limited dataset implies a focused analysis of specific textual headers rather than a comprehensive examination of a large corpus.

g. Inferring:

drawing sensible conclusions from the levels of detail produced in this study.

h. Narrating:

reporting on the findings and conclusions of the current study.

In short, the texted analyzed in this paper are equally distributed over (10) samples, (5) samples per novel. These (10) samples are only specified for the opening lines extracted from the two novels. Picking up the opening lines of the two Infernos is done representatively due to the fact that the data are bulky and large in size (i.e., Dante Alighieri's Inferno holds 377 pages; Dan Brown's Inferno holds 262 pages). If all the pages have been explored, this will undoubtedly take too long a time to finish such a paper. This, in turn, will break down the third advantage of sampling methodology (see Sec. 3.2).

4. Data Analysis

Applying the Schematic Deviancy Model to the data, the SKD will be sketched cognitively using Cmap Tools (Ver. 6.04). Because SKD has its own linguistic side-effects, these side-effects would be quantified and enumerated linguistically by calculating the TTRs extracted from Wordsmith (Ver. 4). This, in turn, will determine the degree of deviancy resulted from SKD of the opening lines extracted from the two novels, see Table (1). This facilitates not only the way *deviation* occurs cognitively in the two novels. Additionally, it will also reflect the emerging linguistic departure of the selected data. This study will thus provide a new technique for measuring the degree of deviancy scored in the two Infernos.

The remainder of this paper will take a deep glance into how the level of detail is used in the two Infernos to accomplish a type of cognitive schematic deviation.

4.1 Dante Alighieri's Inferno

Dante Alighieri's Inferno is an allegorical epic novel written in 1314. It is one of the sequels to The Divine Comedy and was first translated into English by Henry Longfellow 1867, an American poet, educator, and linguist who actually finished the first American translated version of Inferno and thereby released Dante's literary masterpiece to the Age of Exploration. Sin, Justice, Pity, Piety, This Life, Afterlife, and Fame are among the novel's many and varied themes. Other themes are intertwined with social realities.

4.1.1 The SKD of Alighieri's Opening Lines of the 1st Sample

When the proposed model is applied to the data at hand, all readers negotiate what they have in mind with what the narrator has in his mind. What triggers their schematic knowledge, to be negotiated with that of the narrator, is the four types of linguistic headers mentioned in Figure (1), STEP (2).

However, the narrator explicitly refers to several schematic configurations that bring to mind specific levels of detail or traceable fallback constituents of a schema. Typically, these fallback/ default aspects are supposed to be evident in the mutual previous knowledge of the readers and narrator and thus are not expressly stated but indirectly recaptured with the aid of the textual headers provided in the novel.

Activating readers' schematic knowledge is triggered by the various levels of detail resulted from a particular process, called *the cognitive disruption of schematic instantiation*. Thus, when reading the first sample mentioned in Table (1) above, readers may expectedly activate the DRIVING schema depending on the linguistic headers/ markers, such as MIDWAY, JOURNEY, I, MYSELF, STRAIGHTFORWARD PATHWAY, LOST, and FOREST.

This DRIVING schema may also involve various levels of detail triggered with the aid of the other linguistic cues. Such linguistic headers assist readers in determining which schema must be used cognitively in a specified scenario, allowing various layers of schematic knowledge details to be initiated. Depending on these headers, readers will be able to activate or manage the schematic knowledge they have in mind.

The next step will be performed by Cmap Tools which will cognitively create a clear-cut and rather hierarchical reflection of the various levels of detail associated with the *Driving Schema*. See, for example, the various levels of detail drawn in Figure (2) below:

Figure 2. Levels of detail of driving schema triggered in Alighieri's opening lines of the 1st sample

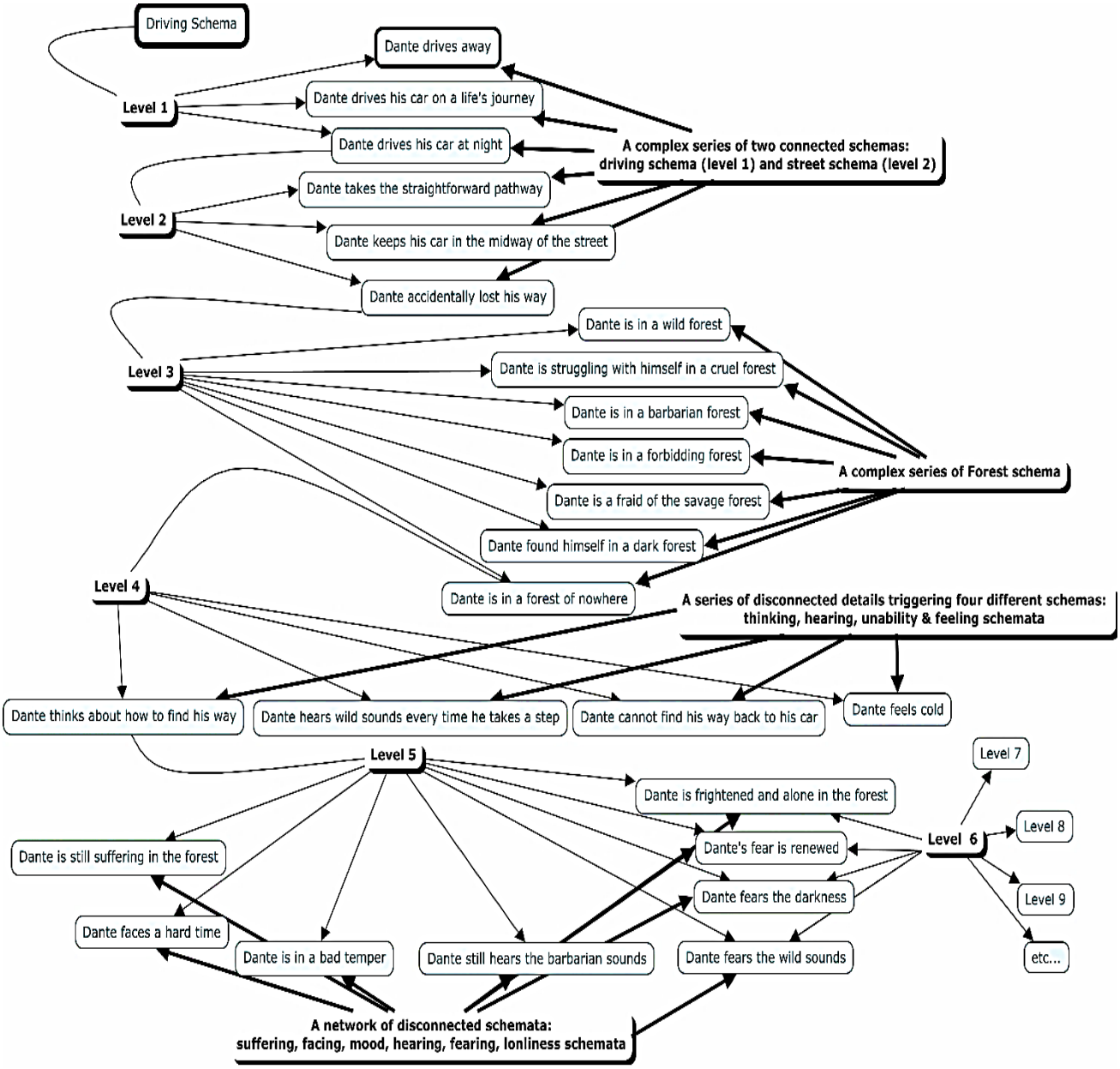


Figure (2) appears to be extended between two extreme schematic values: optimum schematicity, depicted certainly by the sentence "Dante drives away" portrayed in level (1) and optimum explanation, characterized complicatedly by a series of disconnected details triggered within level (4). The narrator, on the contrary side, stylistically makes his own choices somewhere along the middle and totally dismisses levels (1) and (2), leaping further into the third and then into the last level.

When it comes to dealing with what readers normally store in mind, the figure above appears strange because it is designed in terms of a complex schematic network.

Readers would then be able to trigger depicted conceptual frameworks similar to those shown above using their schematic knowledge. The first two levels are expectedly connected due to textual headers such as JOURNEY, PATHWAY, MIDWAY, and LOST HIS WAY. As it is proposed that the first sample triggers the DRIVING schema, another schema, STREET schema, is expected to be created. In this way, readers can tell that the DRIVING and STREET schemas are automatically linked because they are both stored within their schematic knowledge.

Within levels (3), (4), and (5), there are even more deviant and complex schematic levels of detail. For example, the third level initiates a complex series of FOREST schema. This causes readers' interpretations to diverge, and the result is that the fourth level is instantiated even further. The latter provides somewhat complicated and disconnected schemata (e.g., THINKING, HEARING, INABILITY and FEELING schemata).

In terms of the last level (Level 5), readers may cognitively disrupt their schematic instantiation by delving deeply into various detached conceptual frameworks, as what follows: SUFFERING, FACING, MOOD, HEARING, FEARING, and LONELINESS schemata. In this sense, a very specific question may be raised: Do these levels of detail have an end?

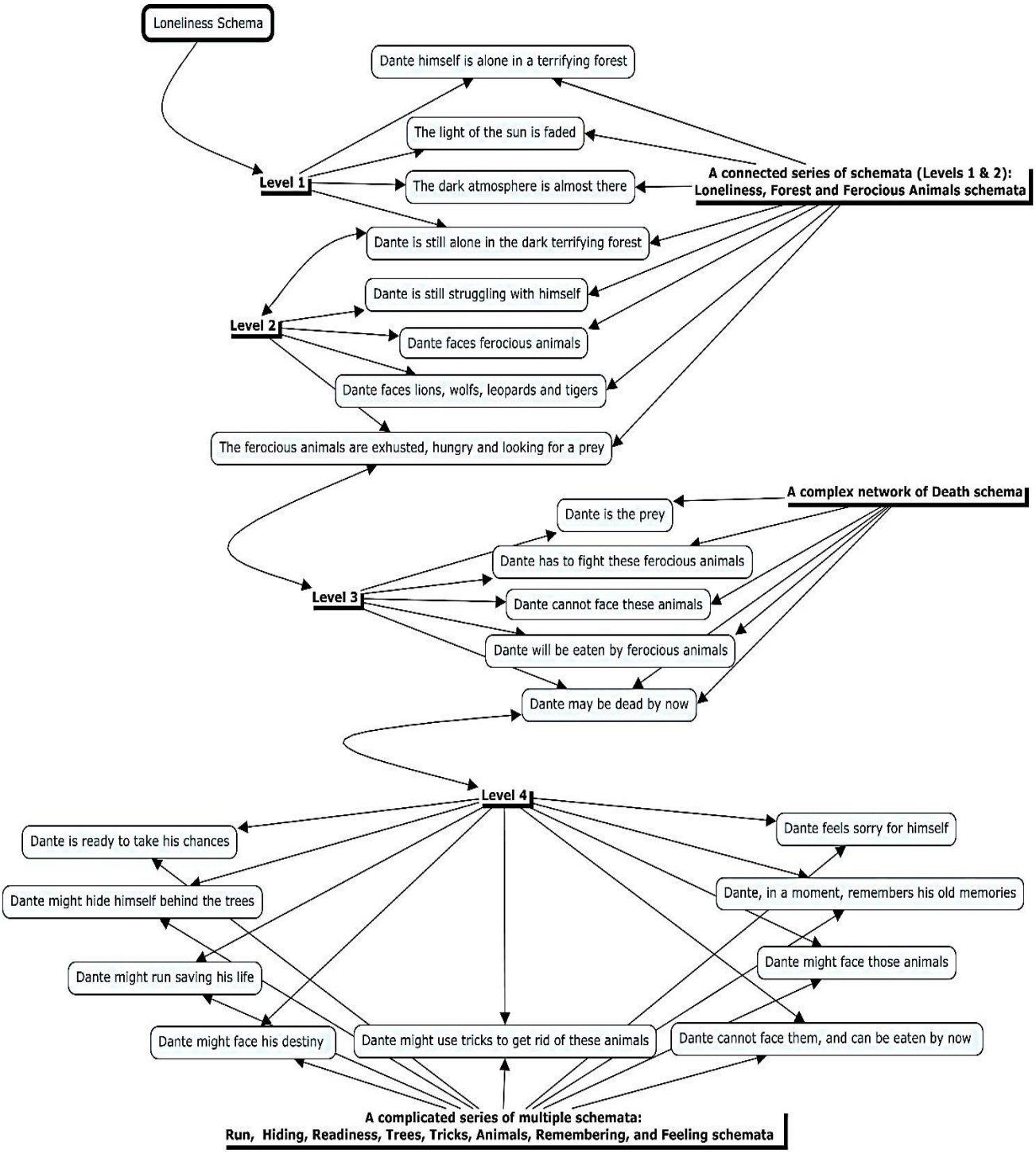
The other levels of detail appear to have no end in an attempt to answer this question. This is because the more textual headers mentioned in the text, the more over-extended levels of detail have their own extensions in a sequential way, and vice versa. Another reason that could be addressed here is that readers from various backgrounds will almost certainly have additional readings of the exact text, and what triggers their readings is all done by the linguistic cues provided in the text they read.

4.1.2 The SKD of Alighieri's Opening Lines of the 2nd Sample

As shown in the first sample, certain linguistic cues can greatly aid readers, in general, in triggering the appropriate schematic levels. However, the second sample holds precondition headers (e.g., DAY, DEPARTING, RELEASED, ANIMALS and EARTH); instrumental headers (e.g., I, FOUND, THE ONLY ONE, MADE, READY, MY SELF, SUSTAIN, and EMBROWNED AIR); locale headers (e.g., FATIGUES and THE WAR); and internal conceptualization headers (e.g., WOE, MEMORY, ERRS, and RETRACE).

In the second sample, each of these linguistic and/or textual cues activates a peculiar network of levels of detail within the overall framework of readers' schematic knowledge relating to the experience of being alone (i.e., LONELINESS schema). These levels of detail go beyond what readers would reasonably expect and deviate from what the narrator has provided in the sample, see below what Figure (3) unexpectedly draws via Cmap tools:

Figure 3. Levels of detail of loneliness schema triggered in Alighieri's opening lines of the 2nd sample



Following the diagram above, the narrator stylistically performs a variety of artistic maneuvers. He chooses some levels of detail and leaves others out in what appears to be a complex series of schematic choices. Rather than simply selecting the highly reduced and schematized sentence "DAY was departing", the narrator goes even further, making a series of complex selections all over the different specification levels ranging from (2) and (3) up to (4) and progressively bringing it back to level (2).

That is, within level (1), the narrator has clearly mentioned the preconditioning headers (i.e., DAY, DEPARTING, RELEASED, ANIMALS and EARTH), which work as the starting point of triggering the other levels of detail (2), (3) and (4) represented by instrumental, locale and internal conceptualization headers respectively. The first level (i.e., LONELINESS schema) is connected somehow with the second creating other new schemata (e.g., FOREST and FEROCIOUS schemata).

Moving on to the third level, the narrator constructs a somewhat reversed schematic image of what the phrase "and I the only one" could necessarily imply. In this regard, readers may believe that, because there are "ferocious animals" (see level 2), "Dante himself is the prey".

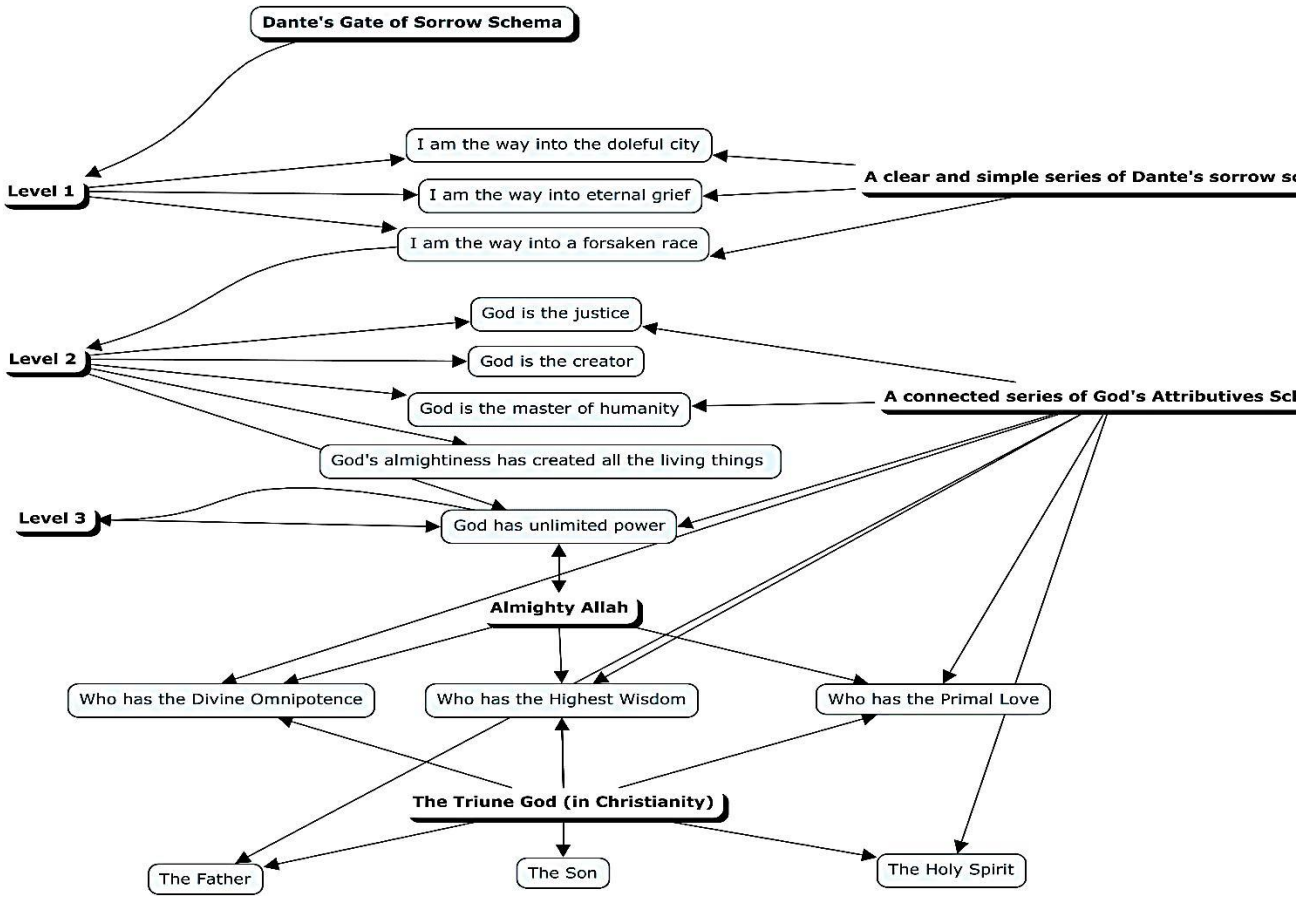
This level generates more deviant details, leading to create a complex series of "DEATH schema". As for deeply going through more deviant levels of detail, level (4) creates a more complicated series of multiple schemata (e.g., RUN, HIDING, READINESS, TREES, TRICKS, ANIMALS, REMEMBERING and FEELING schemata).

Returning to level (2), the narrator demonstrates a consistent avoidance of schematic under-specification and his desire is to look forward to over-specification within the context of the readers' most familiarized life experience. The narrator, thus, makes up for every level of detail associated mostly with the REMEMBERING schema (see level 4). Such a schema misrepresents the readers' schematic expectations, which then customarily be conveyed in two convenient and schematized sentence fragments such as: "Dante faces ferocious animals" and "the ferocious animals are exhausted, hungry, and looking for a prey" (see level 2).

4.1.3 The SKD of Alighieri's Opening Lines of the 3rd Sample

Just as the readers have grown accustomed to the narrator's over-specified schematic preferences that generate utterly pointless traceable levels of detail, the narrator decides to underperform the readers' over-specified schematic knowledge with nothing but an amazingly underspecified depiction of repeated schema, which would be entitled DANTE'S GATE OF SORROW. Such a schema is represented by the repeated preconditioning phrase: "Through me the way". As for the other types of linguistic headers, they provide the following levels of detail drawn in Figure (4) below:

Figure 4. Levels of detail of Dante's Gate of Sorrow schema triggered in Alighieri's opening lines of the 3rd sample



Unlike the previous samples, sample (3) above indicates that level (1) consists of simple and straightforward interpretation, with the result being a single schema describing Dante's sorrow. This could be because the narrator has said "Through me the way" several times.

In this case, readers would expect the narrator to go over all of the familiar details that fill the slots of the DANTE'S GATE OF SORROW schema, which is represented in the first level. As readers progress, there may be many attributives that describe God on the second level. This means that God is more than just 'Justice', 'Creator', or 'Master', because there are ninety-nine attributives that describe Almighty Allah in Islamic beliefs.

This also applies to the third level, but from two different perspectives. At first glance, these characteristics appear to be unique to Islamic culture. As for the second, 'The father', 'The Son' and 'The Holy Spirit' are three fixed attributives that describe God in Christianity, and hence lied down under the umbrella of "God's Trinity" or "The Triune God".

All three levels of schematic explication in the "Dante's Gate of Sorrow" schema are immensely nullified and schematized in terms of three under-specified and schematically simplified sentence fragments:

- THROUGH me the way is to the city dolent.
- Justice incited my sublime Creator.
- Created me divine Omnipotence.

Such an elevated schematic concision stands forth not only as the overloaded and deviated levels of detail that readers create but also as an internal deviation from a high schematic specificity norm that has been set in place multiple times all over the sample at hand.

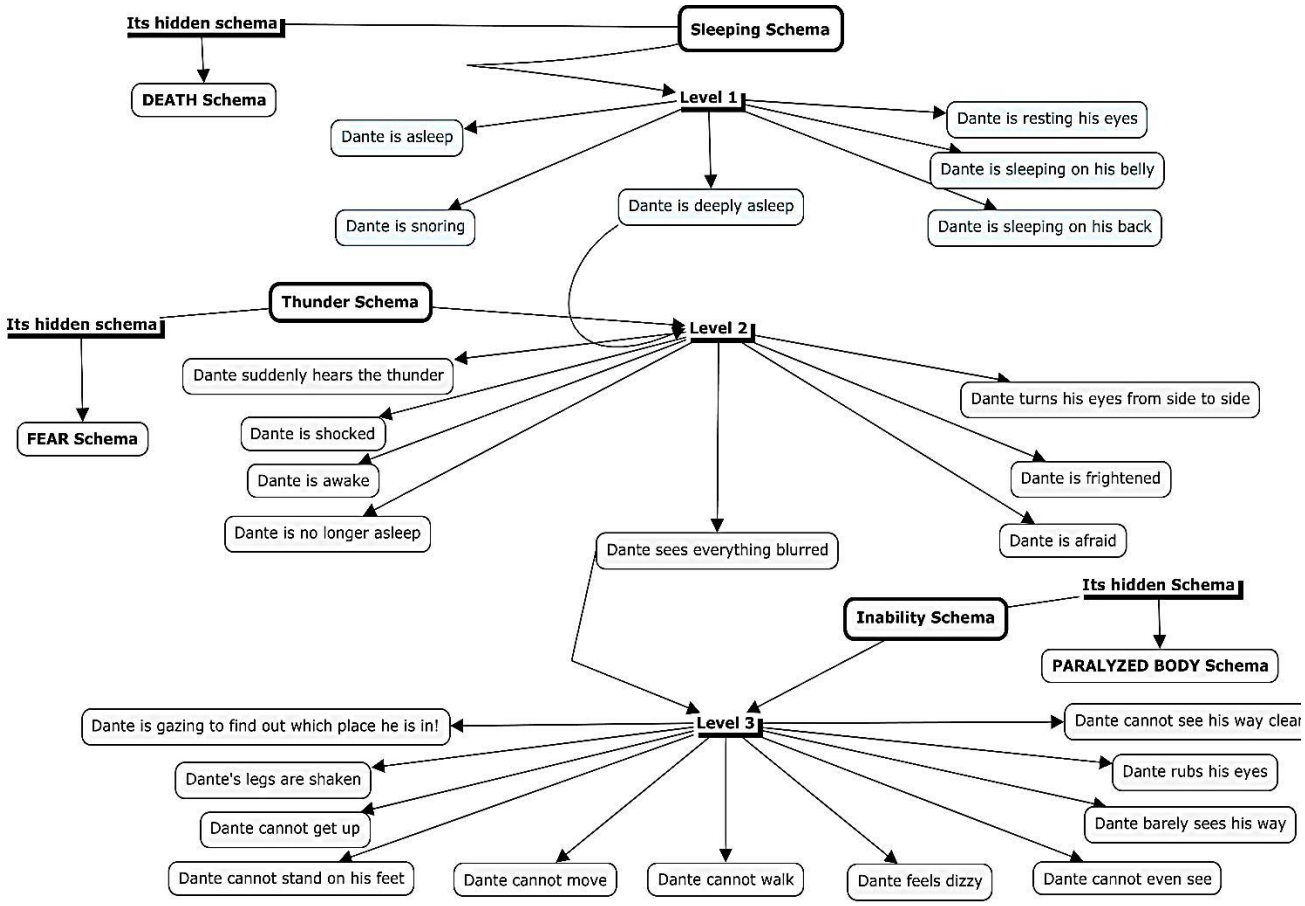
4.1.4 The SKD of Alighieri's Opening Lines of the 4th Sample

Exploring the novel's 4th sample, this study continues to track and identify the most formulaic and biased default elements, within which readers are supposed to be more or less closely associated with. Hence, the strangeness of readers' interpretation can be then detected and brought to the limelight. In order to identify the SKD, the linguistic headers in sample (4) are remarkably recognized as aesthetic functions of schematic level choice. Such a sample is noteworthy for the fact that almost every triggering of the most ordinary and quotidian level of schematic detailed information is either guided or initiated by a pretty weird and dreamlike narrative. Dante initiates the weirdest and most superfluous life experience by employing the most recognizable levels of detail in a schematic representation.

The preconditioning headers, represented in "BROKE the deep lethargy within my head", "steadfastly I gazed" and "rested eyes", initiate a close familiarity of SLEEPING schema, and then are immediately followed by an extremely instrumental and bizarre header (i.e., "A heavy thunder"), creating THUNDER schema.

Since the narrator does not know where he is, locale headers are unknown. As for the internal conceptualization headers, they are represented by certain words like: "force", "wakened", "upstarted", "uprisen erect" and "recognize", and thus activating INABILITY schema. However, all these headers trigger various deviant levels of schematic detail diagrammatically drawn in Figure (5) below:

Figure 5. Levels of detail of sleeping, thunder and inability schemata in Alighieri's opening lines of the 4th sample



What attracts the researchers' attention is that sample (4) is made up of three contrasted schemata: SLEEPING, THUNDER, and INABILITY. This implies that the narrator prefers to give the reader a life jacket – or, to put it another way, a vastly over-specified familiarity with ordinary life experiences – before plunging him into a strange and magical world of what Inferno looks like.

The juxtaposition of contrasting types of incidents and adventures appears to be a common feature of epic literature: the known with the unknown, the predictable with the unpredictable. That is to say, the 'SLEEPING' schema may refer to another hidden schema (i.e., 'DEATH' schema); the 'THUNDER' to 'FEAR' schema; and the 'INABILITY' to 'PARALYZED BODY' schema.

All of these schemata are not explicitly mentioned by the narrator. Still, they are implicitly recovered by readers' schematic knowledge. Thus, their schematic knowledge deviation is clearly present and visible via the over-specified levels of detail displayed visually in the figure above.

4.1.5 The SKD of Alighieri's Opening Lines of the 5th Sample

It is worth noting that the three schemas, portrayed in the fourth sample, represent Inferno's first circle and serve as a prelude to its second circle. It evidently goes on to give a rather internal conceptualization picture of what "SLEEPING" schema is exactly intended for. This means that "SLEEPING" schema (in Sample 4) has its own reflection on Sample (5) represented by Inferno's second circle.

The linguistic headers in the sample above, for example, trigger the INFERNO's 2nd circle schema: descended out, down, the less space begirds, dole, judge, snarl, Minos, horribly, send and transgressions. Figure (6) below provides a schematic representation of hierarchical various levels of detail involved within the INFERNO's 2nd circle schema.

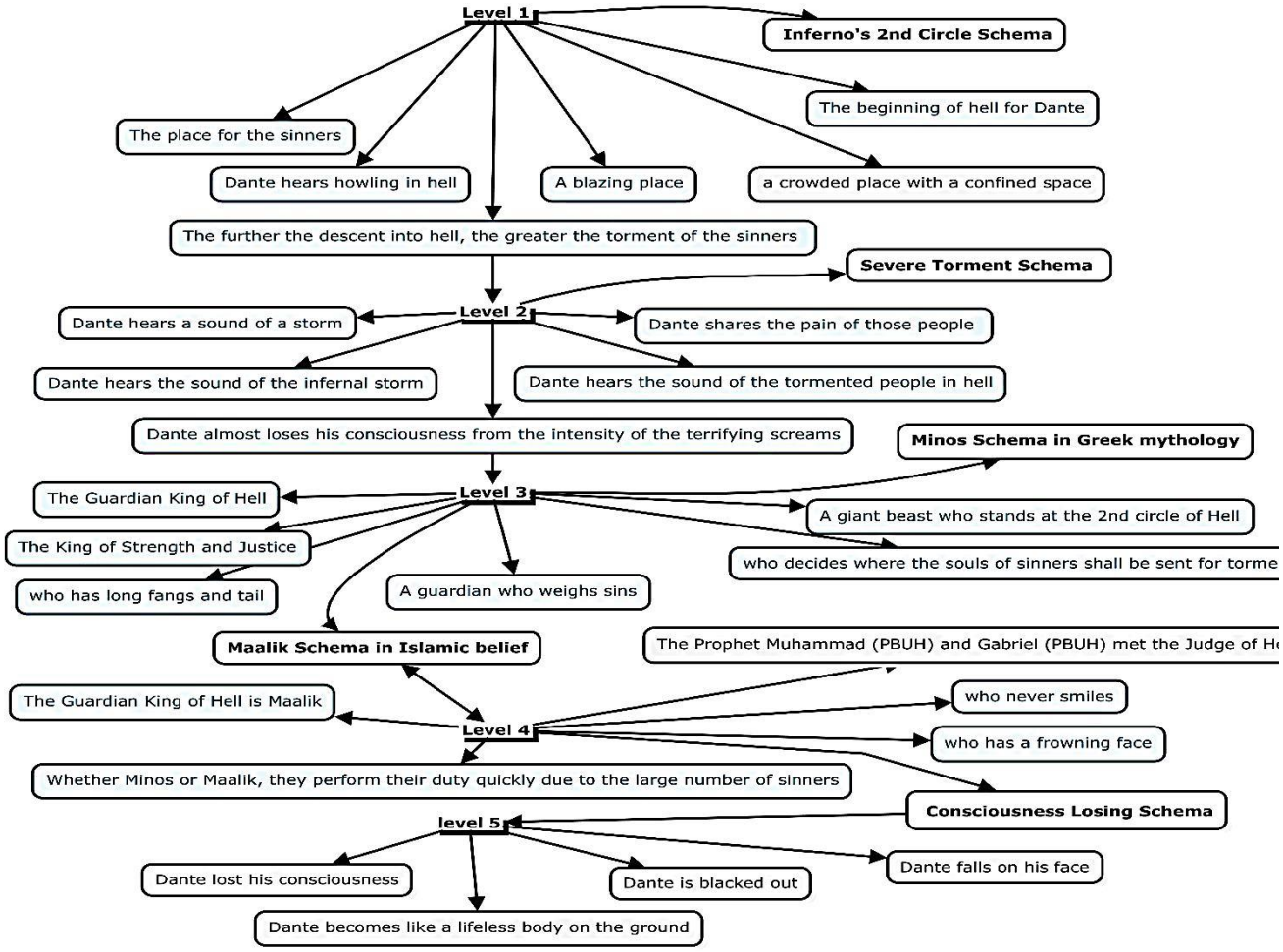
Spelling out every piece of detail that a reader is already expected to be aware of and familiar with, the narrator in sample (5) makes an explicit state to some schematic instantiations that bring to mind certain levels of detail or recoverable predefined components of INFERNO schema. Customarily, such predefined components are presumed to be available in the mutual conceptual understanding of readers and narrators and are therefore not directly defined but indirectly retrieved.

The narrator, consequently, makes his stylistic choices somewhere in between and clearly ignores levels (4) and (5) focusing on levels (1); (2) and (3) in the first place. This is due to the fact that the narrator directs his attention towards "INFERNO", "Severe Torment" and "Minos" schemas, making readers create a weird network of levels of information. The over-specified schematic levels established so far in sample (5) may not be fulfilled as expected by all readers. Rather, there might be extra levels of detail that go beyond readers' expectation. This can be seen in level (5). Such a level can be gradually descended via the previous levels (i.e., as a result of the foregoing levels).

This means that what the narrator dealt with in his fifth sample leads to an underspecified level with few details. That is, every person in this world cannot bear to see how Inferno devours sinner people, and no one would hear the sounds of their suffering. That is why readers may reach an extra and/or limited interpretation: "Dante lost his consciousness".

In general, readers may anticipate or predict varying levels of detail, not only in terms of how the narrator has filled in the slots of the INFERNO's 2nd schema but also in terms of how readers may create other new schemas based on their schematic knowledge. Take level (4) as an example, readers may create new levels of detail depending on their Islamic background.

Figure 6. Levels of detail of Inferno's 2nd circle triggered in Alighieri's opening lines of the 5th sample



This indicates that the schematic gap between levels (3) and (4) is extremely close in terms of familiarity. In other words, the closer the schemata are in terms of various backgrounds of readers, the smaller the schematic gap between the new schema and familiar becomes.

4.2 Dan Brown's Inferno

Inferno, written by the American novelist Dan Brown, is the fourth installment in his Robert Langdon series after Angels & Demons, The Da Vinci Code, and The Lost Symbol. Ten years after the release of The Da Vinci Code (2003), Inferno is released on the fourteenth of May, 2013.

It has spent the first eleven weeks of its official launch at the top of the New York Times bestseller list for paperback narrative, and it is continued to be at the top of the list for e-book narrative for the first seventeen weeks of its publication. On October 28, 2016, a theatrical cut of Inferno is set to release in the US.

However, Brown's Inferno has been influenced by Dante's Inferno in terms of its portrayal of Hell. Robert Langdon is the protagonist in Dan Brown's Inferno. Brown affirms that Langdon is "a fictional alter ego", declaring that he is "the guy I wish I could be". Although most readers are aware that the terms "Inferno" and "Hell" refer to a large and dangerous fire, the novel "Inferno" has its own irregular language usage that may run counter to readers' expectations and impart a sense of SKD.

4.2.1 The SKD of Brown's Opening Lines of the 1st Sample

Analyzing the first sample (see Table (1) above), one may note that Brown's Inferno deviates from the readers' typical preconceived knowledge with its meticulous descriptions of hell, bodies, blood, and fire. All these ideas are jumbled together in Brown's Inferno.

The reader activates every discernible detail that may be missed and/or unobserved in a typical schema instantiation. Therefore, Brown explicitly uses certain textual words that evoke several schematic representations. These representations work to create specific levels of information or traceable standard parts of a schema, see Figure (7) drawn by Cmap Tools down below.

Following the linguistic headers presented in the sentence "I AM THE Shade", it is clear to observe, from Figure (7), that a dominated SHADE schema is drawn in the first level, among other headers. This kind of schema has the upper hand over other schemas in terms of two perspectives. At a first glance, the narrator stylistically has foregrounded the idea that something bad is going to happen represented by an ominous sign "the shade". This is accomplished by capitalizing the sentence "I AM THE Shade"; as if the narrator were enunciating it with a rising then falling intonation occurred on the word "Shade". At the second glance, the narrator uses the SHADE schema and makes it unique inside his readers' minds to the extent that such a schema has nothing to do with the other schemas and it may be linked to DEATH schema, which is implicitly recovered.

In addition to the excessive levels of detail of the SHADE schema, the narrator also employs what is referred to as *deviation within deviation* – a deviation that occurs within the SHADE schema itself. Simply put, the narrator might want to deliver a hidden message to his readers telling them that "Wherever you are, DEATH is closer than you think, like a SHADE", *where the* "shade" *could be anything from a virus to an accident to a sickness to death itself.*

As for the remaining levels, the other textual headers (see Table 1) activate ESCAPISM, DIRECTIONS/ MAP OF ESCAPE and TIREDNESS schemata represented by the levels (2), (3) and (4) respectively. The hierarchical representation of these levels resembles a densely connected network of detailed information, making a consequent series of events with no stopping. Still, the *overextended* levels of detail are generated by the readers.

It is also important to note that even though the narrator initially focuses on the idea of "Shade," he implicitly ends his opening lines with a variety of the same idea, which is represented by the linguistic cues "And still they pursue me". This, in turn, increases the idea of DEATH in his readers' minds.

In "And still they pursue me," the word "they," used as the conceptualizing textual header, may activate two closely related sentences that are part of the TIREDNESS schema: "Enemies are chasing him" and "Enemies want him dead." As a result, the readers are led to believe that the narrator is still emphasizing the idea presented in the first level, which is implicitly recovered within the DEATH schema and/or constituted within the SHADE schema (see the levels of detail, in particular levels: 1 and 4).

4.2.2 The SKD of Brown's Opening Lines of the 2nd Sample

Looking deeply at the second sample, this paper discovers that the narrator uses a limited number of conceptualizing textual headers, for example, *memories*, *materialized*, *darkness, red, blood, motionless and shroud*, that lead to mysterious, but very ramified interpretations, as if he were strongly motivated to imbue the idea of *death* in his readers' minds, see figure (8) below.

Figure 7. Levels of detail of shade schema triggered in Brown's opening lines of the 1st sample

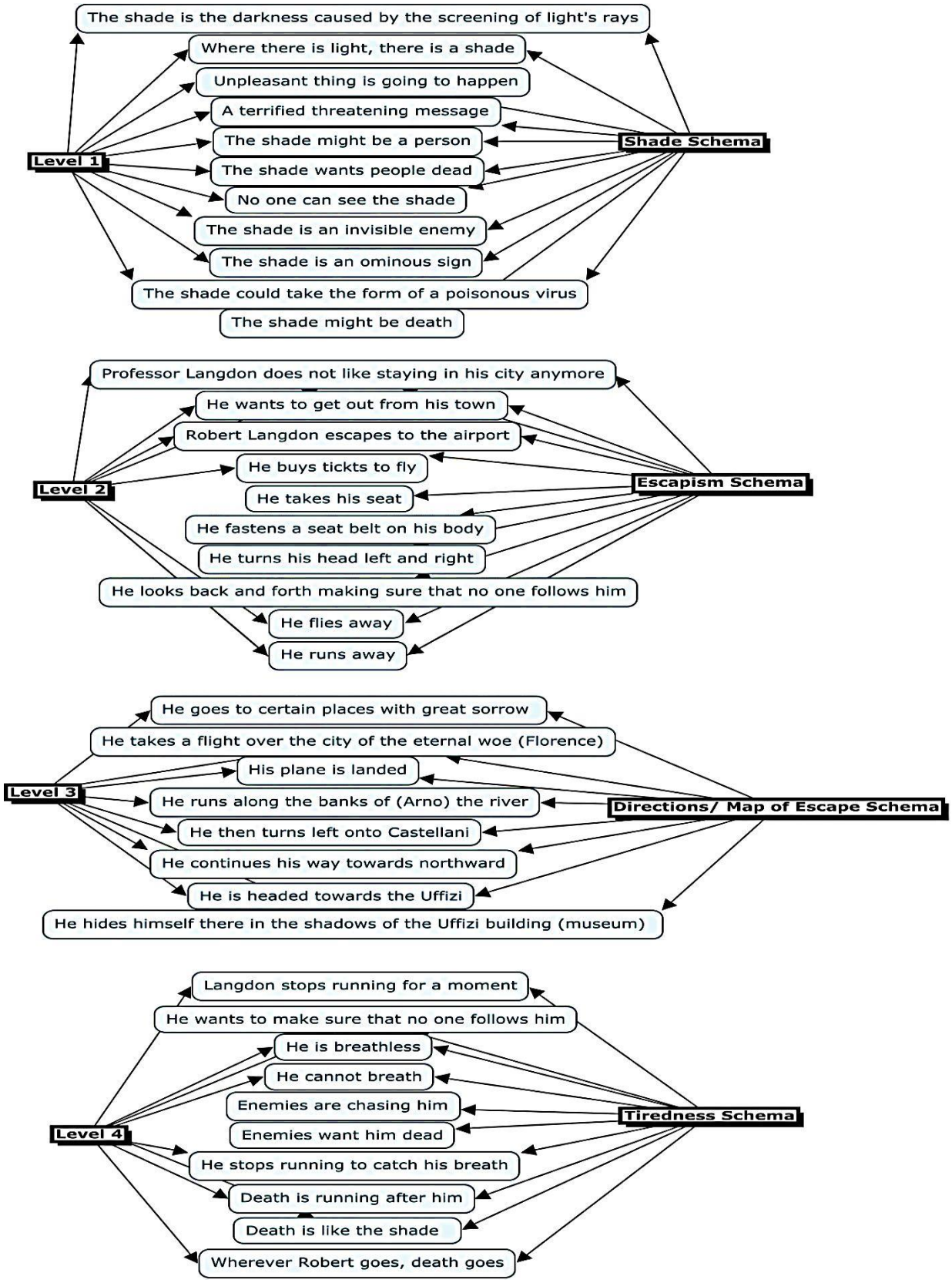
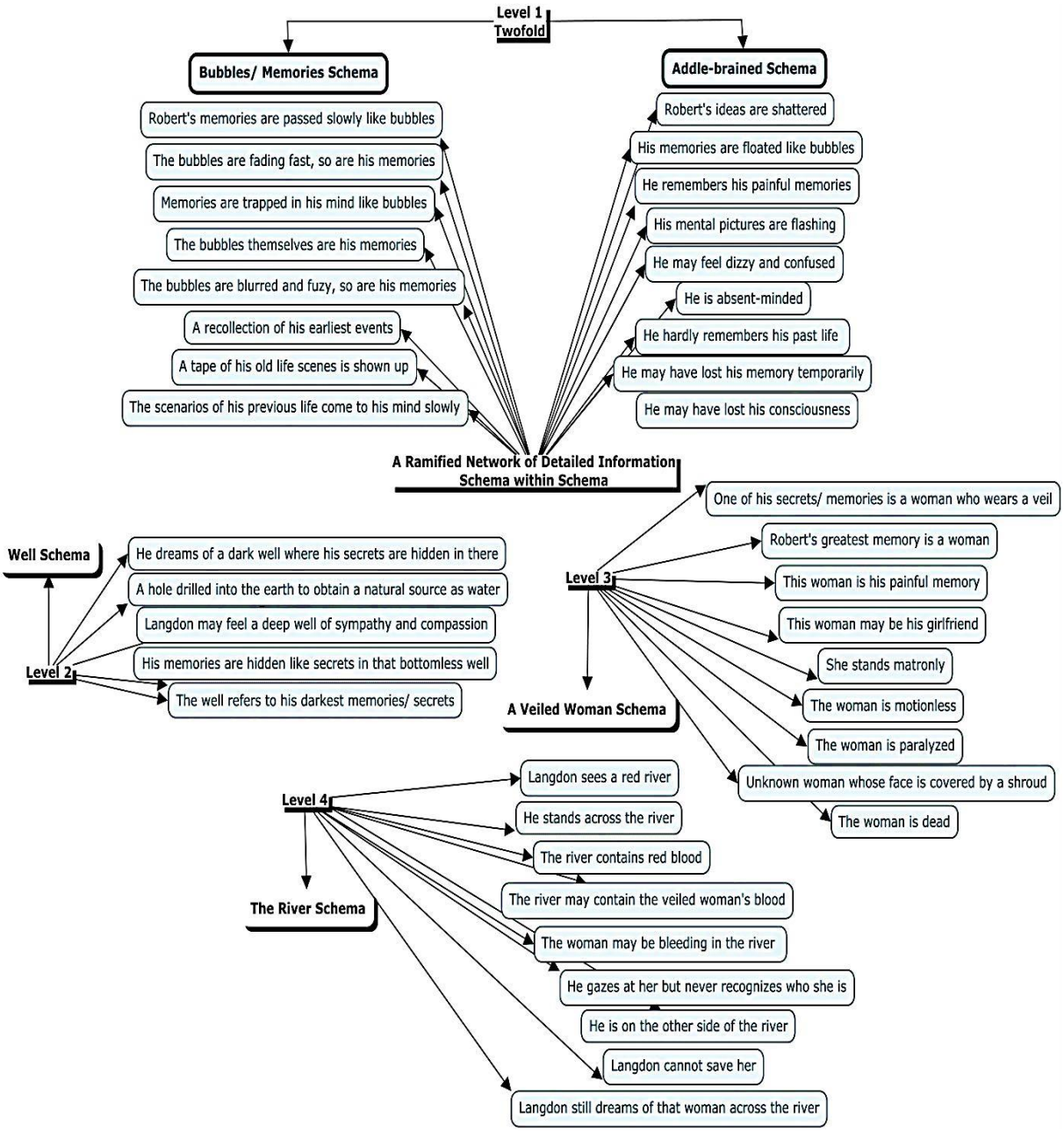


Figure 8. Levels of detail triggered in Brown's opening lines of the 2nd sample



Following the textual headers shown in table (1) above, six schemata are activated with their pertinent detailed information. The BUBBLES/ MEMORIES schema and the ADDLE-BRAINED schema are the twofold hierarchal representations of the first level. As for the WELL, A VEILED WOMAN, and THE RIVER schemata, they respectively serve as portrayal representations for levels (2), (3), and (4).

If readers are mindful enough of reading this and the samples that follow, it is true that many fantasy-like images would be present in Brown's Inferno, but the narrator has based these on the incredibly hazy concept of "reality". It is the only spot where one can reside and/or make an effort to comprehend the surroundings. It must illustrate a specific facet of life so the reader is able to visualize or experience it.

This reality has been established by Dan Brown's Inferno, making readers expect every detail easier than making them expect a random selection of concepts happened to occur outside this reality, as in Alighieri's Inferno.

When reading Brown's Inferno, the readers' pre-existing schemata encounter a sort of cognitive challenge. As they try to comprehend literary texts, readers have the capacity to cause conceptual conflict, which is said to be a key element of literary texts. Nevertheless, sample two exhibits the triggering of unusually overextended levels of detailed information. This is shown in the figure above, where a ramified network of information is clearly displayed in the first level (i.e., two schemas within one level or schema within schema.

In terms of the other levels, the narrator makes his stylistic choices between levels (2) and (3), then moves on to the final level. When the narrator uses the textual headers, Bottomless Well, The Red River, and a Motionless Veiled Woman whose face is covered with a shroud, readers are forced to come up with even more deviant details. Once more, readers' thoughts regarding DEATH are strongly influenced by these linguistic cues.

4.2.3 The SKD of Brown's Opening Lines of the 3rd Sample

Taking the third sample into account, readers grow accustomed to Brown's overly detailed schematic choices, which elicit unneeded extracted levels of detail. This time he decides abruptly and unexpectedly to disappoint the readers' overly detailed schematic expectations with drastically underspecified details of only one schema, the HOSPITAL schema.

Figure 9. Levels of detail triggered in Brown's opening lines of the 3rd sample

What is intriguing about Brown's Inferno, as opposed to Alighieri's Inferno, is that readers can take a moment to breathe to maintain a particular level of schematic expectations via the entire narration. This is because the HOSPTIAL schema's various schematic elaborations that are attached with variously detailed information are incredibly neutralized.

Through his protagonist "Robert Langdon", Brown draws the reader into the strangest and most unforeseen experiences by using the most basic detailed information in a schematic specification. What makes Brown's

Inferno stand out is how even the most basic and everyday schematic details are triggered within the context of a realistic story, and yet schematic knowledge of the readers is deviated.

The narrator, however, provides ample space for his readers, using few opening lines of his third textual sample. This indicates that readers fall down under the umbrella of an excessive schematic deviation as a result of reaching too many details within one schema – the HOSPITAL schema.

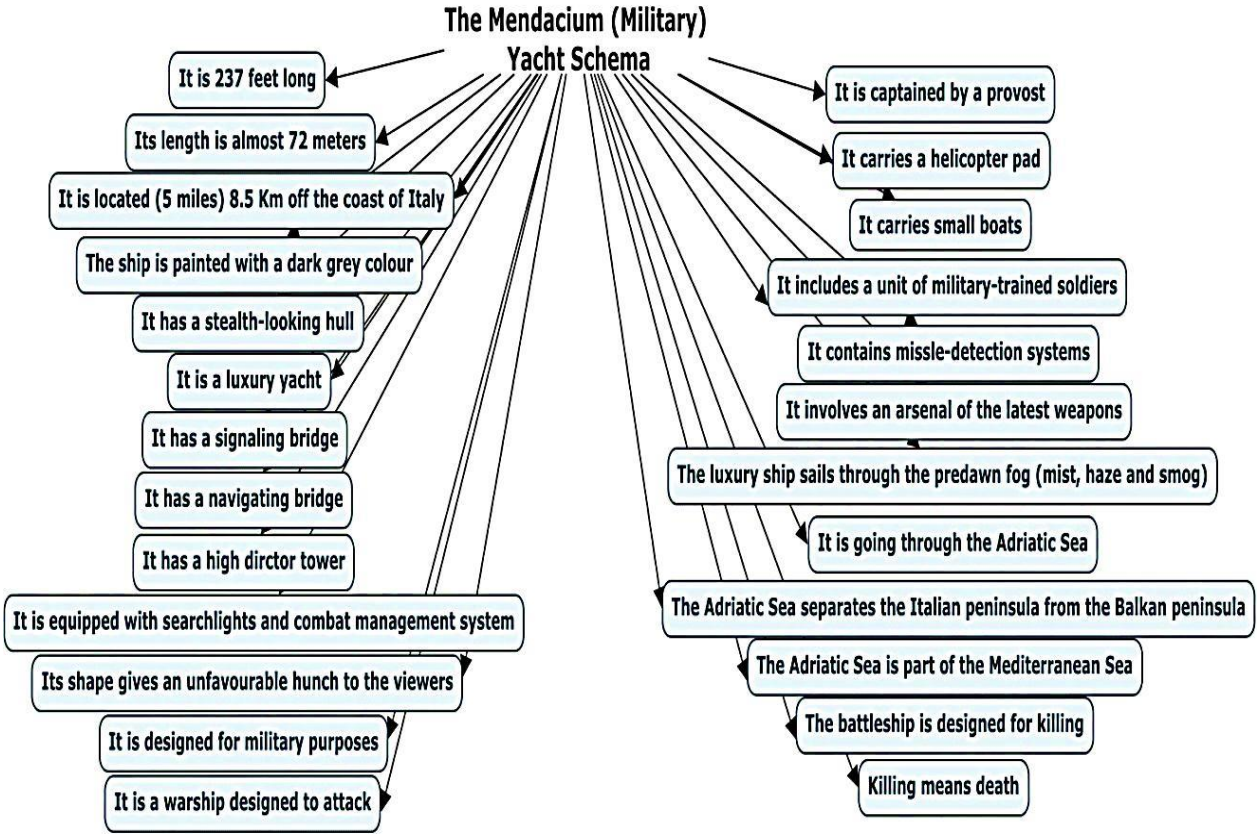
Simply put, although the narrator employs a limited variety of textual cues in his opening lines, all of these linguistic headers refer to a single schema, which causes readers to generate an excessive amount of detail within the HOSPITAL schema. "How Langdon gets to the hospital", "why he is being there", and "what he sees there!', are matters that the reader implicitly has brought up using his prior knowledge – matters that the narrator does not address at all.

4.2.4 The SKD of Brown's Opening Lines of the 4th Sample

The linguistic headers mentioned in the fourth sample, for example, activate a very particular schema, the MENDACIUM (MILITARY) YACHT schema: the coast, 237-foot, luxury yacht, motored, predawn mist, swells, the Adriatic, ship, and military vessel.

The hierarchical encompassing of the different detailed information included in THE YACHT schema is depicted in Figure (10) below:

Figure 10. Levels of detail triggered in Brown's opening lines of the 4th sample



As was the case in the previous sample, the narrator still emphasizes the reader's role in helping him navigate the boat of the opening lines of the fourth sample. Tying the narrator's ideas with the excessive amount of

implicit details, the reader is invited to fill in the gaps left unnoticed by the narrator.

"Why does the narrator specifically urge the reader to fill in the gaps that occur in his first lines of the sample at hand?" – a question that raises doubt about what the narrator is intending to say in this regard!

It can be said that the decision regarding the right amount of specificity or detail in a given schema ultimately depends on the narrator's artistic and aesthetic objectives. Thus, the level of detail that is activated in a text – whether it tends toward underspecified or over-specified levels of detail – is likely an artistic result of the narrator's deliberate or accidental choice.

It is noteworthy that the narrator has ingrained the idea of death in the minds of his readers starting with the first lines of the novel, which are included in the first sample, and continuing to plant the same idea through the opening lines of the second, third, up to the fourth sample.

Consider the last few details in this sample (see Figure 10 above), which portray, for instance, that the image of the warship only ever leads to destruction and consequently "death".

Before throwing readers into the strange and enigmatic environment, it appears that Brown prefers to give them a lifejacket of extremely over-specified engagement with ordinary events, so to speak.

4.2.5 The SKD of Brown's Opening Lines of the 5th Sample

Going further to analyze sample (5), it prompts and evokes even more deviant and challenging schematic levels of detail. What makes sample (5) remarkable is the realization that there is no break this time to allow readers to settle on a certain level of schematic anticipations all over the textual sample at hand. As long as they stay within the boundaries of samples (3) and (4), readers become accustomed to the narrator's reduced schematic levels (i.e., only to one level), which stimulate pointless attainable detailed information. This time, the narrator unexpectedly and considerably chooses to crash the readers' lower schematic-level expectations by providing an exceptionally over-explained description of three totally different schemata.

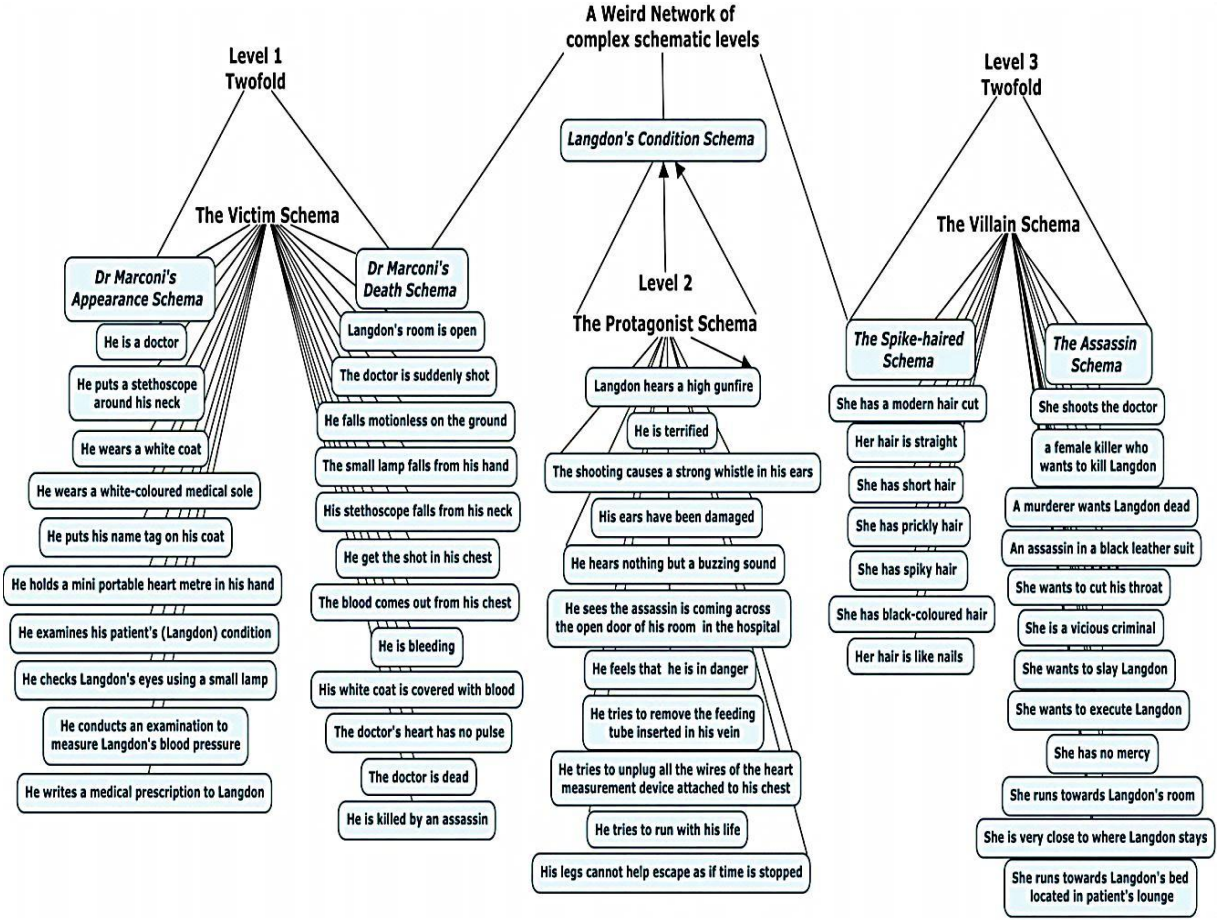
These three schemas are designated as THE VICTIM (level 1), THE PROTAGONIST (level 2), and THE VILLAIN (level 3). However, as shown in Figure (11), *Cmap Tools* clearly depict the hierarchal visualization of these schemata to show the various detailed information that readers may run into.

Examining the representational diagram of the schematic knowledge readers can arrive at, one can see that the narrator keeps trying to create the idea of death in his readers' minds. This is evidently displayed by the very first level 'THE VICTIM schema'. While the textual words in the sample above initially create an extensive and exceptionally weird series of cognitive schematic levels, the narrator appears sufficiently skilled to signal his readers to expect whatever details are already known to them.

However, a schema within schema of linked details is depicted in the hierarchical diagram above. The victim's portrayal schema on the first level is expanded into two attached schemas. The first of which is the doctor's appearance schema and the second is where the narrator has empowered his readers to emerge the idea of death, represented by the doctor's death schema.

Moving forward to deal with the second level, it is represented by Langdon (the PROTAGONIST schema). The narrator here uses a very limited account of textual headers causing his readers in general to activate overextended details – a matter that makes their schematic knowledge deviates from what the narrator has already mentioned.

Figure 11. Levels of detail triggered in Brown's opening lines of the 5th Sample



Keeping the wheel in the same direction, it is undeniably true that a deviation within a deviation exists within the second level. This is because readers, at first glance, expect all the predictable detailed information within the first level, which ends with a twofold schema. At a second glance, because the second level is one-fold, this expectation has been destroyed, resulting in a process known as internal deviation.

Still, *internal deviation* is there within the third level. Simply put, readers in the second level have programmed their expectations on a one-fold schema, and then these expectations within the third level have taken another direction headed towards a twofold schema.

Whatsoever, the third level, represented by the VILLAIN schema, is a twofold schema. Each subsequent schema has its own distinct details. In this case, the narrator employs ambiguous textual cues that lead his readers to construct two distinct schemas: that of the spiky hair and that of the assassin. This is something that leaves readers dumbfounded as to what they are supposed to expect. But, how does a murderer reveal his/her spiked hair? Isn't it assumed that the murderer always hides his/her head?

As a result, the reader is compelled to create a scenario with two distinct schemata rather than just one, as illustrated in Figure (29). The reader builds up multiple pieces of information across two distinct levels within the hierarchical detailed levels.

Figure (11) shows up to be flexed between two directions: *the highest schematic depiction*, which could be reflected basically by the sentence "Dr. Marconi lay motionless on the floor," and *the exceeding explanation*,

which could be portrayed thoroughly by an image of "the spike-haired", and even goes further into the depiction of "the assassin" herself.

5. Measuring the Linguistic Side-Effects of SKD

Adopting his idea of the linguistic side-effects resulting from a schematic level, Cook (1994: 10) unequivocally asserts that deviations on the schematic level may only be an unavoidable result of deviations on the linguistic level. As a result, a linguistic deviation that is considered literary and aesthetic must be equivalent to a deviation at the level of the readers' evidently shared schematic knowledge. In this case, readers' schematic knowledge consists of theoretical levels of cognition which describe how higher-level concepts are constructed from lower-level building blocks.

However, the schematic levels, drawn by Cmap Tools so far, hierarchically and intuitively show how readers' minds in general move from general information (e.g., the textual samples) toward more specific details (e.g., readers' overextended or under-extended interpretations). Therefore, those specific details drawn cognitively by Cmap tools will be carried out linguistically by WordSmith Tools.

In other words, this study is going to extract the detailed information from Cmap Tools and put them in a Plain Text Format (i.e., TXT) file so that the user-friendly software WordSmith Tools can calculate the TTRs, those of the original textual samples and those of the levels of detail resulted from Cmap tools, in a rather accurate way, see Table (2) below:

Table 2. The TTRs of the textual samples and those of the levels of detail

Sample No.	The TTRs of the Original Textual Samples		The TTRS of Levels of Detail Resulted from Cmap Tools	
	The TTRs of Dante's Textual Samples	The TTRs of Brown's Textual Samples	The TTRs of Dante's Levels of Detail	The TTRs of Brown's Levels of Detail
1	0.89	0.78	0.41	0.52
2	0.81	0.84	0.48	0.43
3	0.65	0.80	0.55	0.51
4	0.81	0.82	0.48	0.55
5	0.84	0.85	0.49	0.45
Overall	0.52	0.57	0.28	0.25

Calculating the number of tokens in the data in relation to the number of types (i.e., type/ token ratios, TTRs) can provide an indication of the quantity of textual words used in the samples being investigated. For example, the sentence (I felt sad because I saw my father was sad) has (ten) tokens (I, felt, sad, because, I, saw, my, father, was, and sad) but only (eight) types (I, felt, sad, because, saw, my, dad and was).

As a result, this sentence's type/token ratio is (8 /10 = 0.8) types per token. As the size of a text increases, so does the total number of types. The likelihood of any token that represents a new type is going to be lower (Baker et al., 2006: 150). Thus, the textual samples used in this study are approximately equal in size. A high TTR indicates a high degree of linguistic deviation, whereas a low

TTR denotes a low degree of linguistic deviation.

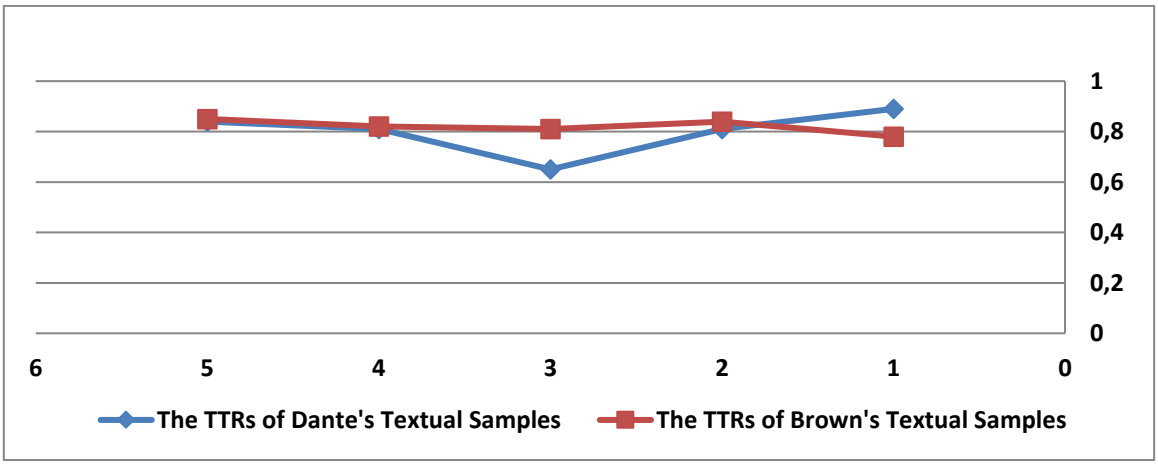
This calculation will assist in making this study serve its own favorable position in reaching accurate and reliable conclusions and promoting what comes from the cognitive/ qualitative analysis.

What attracts the researcher's attention is the diversity of TTR values each textual sample reveals. This aids the researchers in observing:

1. which novel gains a high luxurious amount of textual/ linguistic headers;
2. which novel linguistically scores the highest degree of deviation.

Handling the two points raised above, this study is going to visualize firstly, the TTRs mentioned in the first two columns (i.e., those of the original textual samples of both novels) and secondly, the TTRs calculated in the last two columns (i.e., those of levels of detail obtained from Cmap Tools). This will be accomplished using an Excel spreadsheet, as shown in the diagrams (12) and (13) below:

Figure 12. The TTR curves of both Dante's textual samples and Brown's textual samples



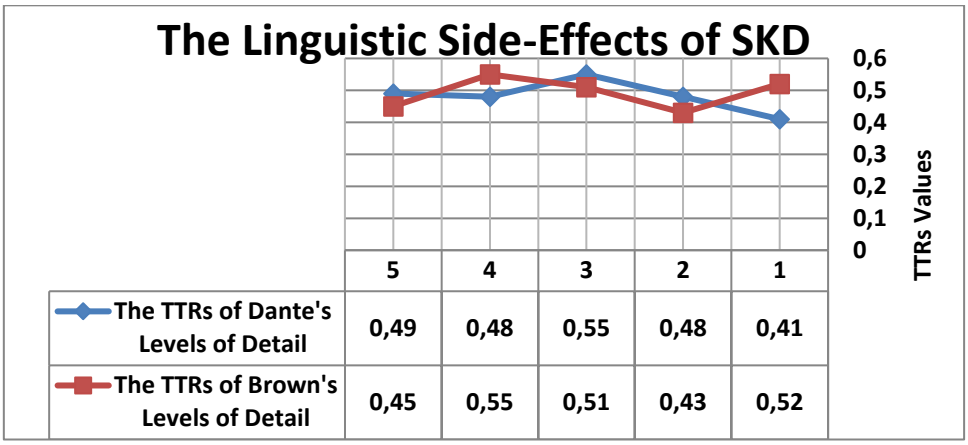
The TTR curves, shown in the graphical representation above, reveal an exceptionally luxurious quantity of textual/ linguistic headers scored in the twentieth samples chosen sequentially from the two Infernos.

Despite the fact that each writer's linguistic repertoire (i.e., linguistic cues) differs and the samples have nearly the same number of tokens (i.e., opening lines) about (500), the TTR values between the two novels act rather strangely and their curves extend ahead in an unsteady manner.

However, the samples with the highest TTR values are the richest in terms of their textual headers. With lowest TTR values ranging from (0.65) to (0.78) and maximum values ranging from (0.81) to (0.89), Alighieri's and Brown's opening lines unexpectedly, but distinctively, come close to one another. Thus, Brown's use of linguistic headers seems so much richer than Alighieri's.

Fulfilling the final step of this paper, the researchers are undoubtedly going to pair up the TTR values scored for 'Levels of Detail' extracted from Cmap Tools in order to determine which novel, Alighieri's or Brown's, displays the highest degree of linguistic side-effects resulting from a deviation in readers' schematic knowledge, see Figure (13) below:

Figure 13. The TTR curves of levels of detail resulted from Cmap Tools (those of Alighieri's and Brown's)



The quantitative consistency of the curves presented in the figure above provides an unavoidably occurring track to sketch out a very concrete proof of linguistic side-effects of schematic deviancy belonging to the two novels. Alighieri's levels of detail have the highest TTR value rate (0.28), while Brown's have the lowest (0.25).

Though the overall value of TTRs is nearly the same, it is evidently true that Alighieri's samples may be rightfully attributed to him as a result of their own great textual multifariousness. On the other hand, Brown's TTR values do give an indication that there is a deviation. Yet, Brown's samples as a whole have a lot of repetitive linguistic headers, and hence cannot be trusted to assume the same likelihood as those that belong to Alighieri.

6. Results and Discussion

The two literary texts adopted in this paper differ in the way the concept of Inferno is presented. Within the context of the *Schematic Deviancy Framework* (see Figure 1), the decision on the right amount of specificity or detail in a given schema at some point rests on the author's creative and stylistic plans. The degree of information that is generated in a text – whether it tends toward under-specification or over-specification – is probably an aesthetic result of the writer's conscious or unconscious decision. Thus, the text creator's creative intents and aesthetic goals are intended to influence this decision.

Dante's Inferno, on the one hand, is presented through extremely fantastical pictures, such as *ragged souls tortured in fire*, *screaming insane sinners bathed in unending rains of ice*, *gloomy castles* and *black towers wrapped in filthy smoke*, and so on.

These depictions of the cursed, of the severe punishment being poured out in the realm of hell for crimes committed on earth, have pervaded Western civilization's collective mentality, and Dante's fantastical journey to the netherworld has influenced the thoughts and fantasies of numerous artists, musicians, philosophers of religion, politicians, writers, and even readers of the new world.

The linking of the usual to the exceptional, or the predictable to the unexpected, appears to represent a type of balance in Dante's Inferno. As a result, the SKD, which was produced by providing the most recognized and recoverable default characteristics, defamiliarizes readers' typical experience of viewing the world around them.

What is notable about Dante's journey (particularly the first five chapters' introductory lines) is that every activation of the most ordinary and conventional level of schematic specifications is either complied with or guided by a weird schema. Readers, through Dante's style, appeal to the most

known levels of detail in a schematic explanation as a way into the oddest and most mysterious events, then progressively to the most astonishing specific details in an attempt to describe what HELL looks like.

Producing exceedingly levels of detailed information, readers of such a narrative deviate from what the narrator meant it to be received. For instance, the DRIVING schema shown in Figure (2) is immediately followed by a rather strange LONELINESS schema displayed in Figure (3).

In other words, during the entire opening lines of the first five chapters of Dante's Inferno, readers are not given any breath to take, so to speak, to settle into precise levels of schematic expectations.

The readers' schematic knowledge deviation is what matters in this paper. It is not merely affected and provoked by the linguistic headers the narrator offers in his textual samples. Additionally, their schematic knowledge lacks an in-depth comprehension of envisioning the inferno itself, (i.e., nobody has ever gone to the underworld and witnessed what is going on there, and then returned with specific descriptions of what and how the inferno looks like). This reflects another sort of deviation, that is *internal deviation*.

However, readers, using their prior knowledge, begin recognizing the concept of *Inferno* in terms of the textual indicators that are brought out specifically in the fourth sample. When the implicitly recovered schema, such as the 'SLEEPING' schema, is activated, readers will definitely engage it with the encrypted schema of 'DEATH'. The THUNDER schema (whose hidden schema is the FEAR schema) and the INABILITY schema (whose hidden schema is PARALYZED BODY/ CORPSE schema) are also examples of this matter.

Brown's Inferno, on the other hand, makes readers directly go around real-life situations in a rather redundant way. Hence, these real-life situations are experienced by all readers. Through his opening lines, Brown generates mysterious thoughts while conveying his true emotions via Langdon to readers (i.e., because he is "the guy Brown wishes to be").

Simply put, the narrator makes the point that *Inferno* is not only a place where sinners go after they die; *Inferno* is also a real place where a person lives right now, in his life, before he dies.

It is true that many fantasy-like images would be present in Brown's Inferno, but the narrator has based these on the incredibly hazy concept of "reality". It is the only spot where one can reside and/or make an effort to comprehend the surroundings. It must illustrate a specific facet of life so the reader would be able to visualize or experience it.

This reality has been established by Dan Brown's Inferno, making readers expect every detail easier than making them expect a random selection of concepts happened to occur outside this reality, as in Alighieri's Inferno. While the concept of "Inferno" alludes to a place where sinners go in Dante Alighieri's extraordinary piece of writing, Dan Brown's work is all about the *mundane inferno* where he presented it through different themes of his novel – through the SHADE, HOSPITAL, DEATH schemata and many others.

In other words, the underlying concept of mundane inferno in Brown's novel begins as soon as readers first recognize the dominated schema of the 'SHADE', see Figure (8). Then, in Figure (9), readers see Langdon awakening in a metaphorical hellish scene. He is in a hospital bed, suffering from a gunshot wound to the head, and is unable to recall anything. This turns us back to Dante's inability to locate his location or recollect the events that brought him to this painstaking situation, see Figure (5).

Whether the concept of inferno is shown using fantastical images or actual infernal ones, readers create overly-extended and/or under-extended schematic levels of information, causing their schematic knowledge to be deviated from what the two narrators have at their disposal. This has been

investigated and proven through using *Cmap Tools*.

Last but not least, this paper has used *WordSmith Tools* to measure the TTRs of the linguistic side-effects that are resulted from the SKD. Comparing the TTRs of the linguistically side-effects of Dante's textual samples with those of Brown's, both revealed a rather slight difference in their graphical behaviour. Although Brown seemed to utilize linguistic headers in a far more sophisticated way than Alighieri, Alighieri's textual samples scored the highest degree of linguistic side effects. This in turn suggests that Dante Alighieri's literary work is written using extremely difficult headers that cause readers to come up with excessive degrees of detail, see the Figures: (12) and (13). As a result, the linguistic deviation, measured in terms of TTRs in both textual samples, is nearly identical to the deviation that occurred at the schematic level.

To sum up, Alighieri's Inferno is presented through exceptionally fantastical images to the point that readers' schematic knowledge is unprepared for comprehending the inferno itself. In contrast to Alighieri's Inferno, which relied on a haphazard collection of ideas that just so happened to take place outside reality, Brown also used fantasy-like images and based them on the remarkably foggy concept of "reality". As a result, it is the sole place where people may live and/or try to understand their surroundings. Dan Brown's mundane Inferno makes it easier for readers to expect every possible detail rather than making them expect a random selection of concepts that happened to occur outside this reality, as dealt with in Alighieri's Inferno.

With lowest TTR values ranging from (0.65) to (0.74) and maximum values ranging from (0.88) to (0.91), it is found that: Alighieri's and Brown's opening lines unexpectedly, but distinctively, come close to one another in terms of their high luxurious amount of textual/ linguistic headers. Though the overall value of TTRs is nearly the same, i.e., Alighieri's opening lines have the highest TTR value rate (0.28) and Brown's have the lowest (0.25), it is evidently true that Alighieri's samples may be rightfully attributed to him as a result of their own great textual multifariousness, and hence it linguistically scored the highest degree of deviation resulting from the SKD. On the other hand, Brown's TTR values do really give an indication that there is a linguistic deviation. Yet, his samples as a whole have a lot of repetitive linguistic headers, and hence cannot be trusted to assume the same likelihood as those that belong to Alighieri.

7. Conclusions

Rounding off this paper, the SKD emerged as a result of a strong association that happens to occur between the reader's schematic knowledge and the linguistic content of a literary work. This association produces a sort of cognitive challenge to the reader's pre-existing schemata. It is a fundamental aspect of literary writing. This kind of writing has its own ability to spark conceptual conflict when readers in general attempt to understand a particular concept.

Triggering certain amounts of default components, this paper has demonstrated the way the reader's prototypical network of schematic expectations may be activated to address this schematic challenge.

Acting as a kind of schematic foregrounding, the activation of such levels of information creates a process referred to as *cognitive defamiliarization*. With variable degrees of over- or under-specification, this kind of cognitive deviation raises a certain threshold of detailed information. Accordingly, the reader's pre-existing schematic repertoire may already contain unexpected degrees of information, thus a schematic challenge may not even need the destruction of old schemata or the creation of new ones.

Two software programs have been used in this study. The former, Cmap Knowledge Modeling Kit, accomplishes its role quite evidently in terms of drawing the schematic levels of detail. Through the use of Cmap Tools, researchers can easily create

diagrammatical endpoints chosen to represent people's concepts. These endpoints can be connected together using lines and linking words (e.g., the textual headers provided in the text) to produce a network of interconnected interpretations readers may produce. Such a production reflects what readers have in their own bucket (i.e., their own schematic knowledge) with reference to a particular topic.

Besides, such tools have been used, in this paper for the first time, to visualize what might a reader think of in generating certain possible interpretations triggered in terms of a particular topic, like Inferno. These tools amazingly proved to visualize the over-extended and under-extended levels of detail. Using Cmap tools, hence, provides a hierarchically clear picture of where and how schematic knowledge deviation exists.

As for the latter, WordSmith Tools statistically proved themselves to deal with a tremendous amount of textual headers. The TTRs values, nevertheless, showed that Dante Alighieri's linguistic repertoire gains the highest luxurious amount of textual/ linguistic headers, and thus his textual samples scored the highest degree of linguistic deviation and/ or side-effects that resulted from readers' schematic knowledge. As for Brown's linguistic repertoire, its TTR values interestingly showed that Brown's samples gain a lower degree of linguistic deviation than that of Alighieri. This is due to the fact that Brown's textual samples have a lot of repetitive linguistic cues.

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