

10. SEMIC ANALYSIS

SUMMARY

Semic analysis was developed within the field of semantics (the study of meaning in linguistic units). This chapter presents Rastier's interpretive semantics, and semic analysis as formulated therein. Semic analysis is performed on a semiotic act – a text, for example – by identifying the semes, that is, the elements of meaning (parts of the signified), defining clusters of semes (isotopies and molecules) and determining the relations between the clusters (relations of presupposition, comparison, etc., between the isotopies). The repetition of a seme creates an isotopy. For example, in "There was a fine ship, carved from solid gold / With azure reaching masts, on seas unknown" (Émile Nelligan, "The Golden Ship"), the words "ship", "masts" and "seas" all contain the seme /navigation/ (as well as others). The repetition of this seme creates the isotopy /navigation/. A semic molecule is a cluster of at least two semes appearing together more than once in a single semantic unit (a single word, for instance). For instance, in the poem just quoted, there is a semic molecule formed by the semes /precious/ + /dispersion/. It appears in the "streaming hair" ("*cheveux épars*") of the beautiful Goddess of Love (Venus) who was "spread-eagled" ("*s'étalait*") at the ship's prow, and also in the sinking of the ship's treasure, which the sailors "disputed amongst themselves" ("*entre eux ont disputés*").

1. THEORY

Semic analysis is performed on a semiotic act – such as a text – by identifying the semes (the elements of meaning), finding clusters of semes (isotopies and molecules) and determining the relations between the clusters (relations of presupposition, comparison, etc., between the isotopies). Semic analysis was developed in the field of semantics (the study of meaning in linguistic units). This chapter presents Rastier's interpretive semantics, and semic analysis as formulated within this theory.

Interpretive semantics was founded by François Rastier, a student of Greimas and Pottier (see Rastier, 1997 [1989], 1991, 1994, 1996 [1987] and 2001; Hébert, 2001). It is a "second-generation" synthesis of European structural semantics, developed in the wake of Bréal and Saussure, then Hjelmslev, Greimas, Coseriu and Pottier.

First we will present the basic concepts of interpretive semantics; then we will discuss the methodology of semic analysis.

1.1 CONCEPTS OF INTERPRETIVE SEMANTICS

1.1.1 THE SIGN AND ITS CONSITUENTS

An appropriate way to begin is by reviewing the definition of the sign and giving a brief overview of semes and isotopies. The sign is composed of a signifier, which is the "perceptible"¹ part of the sign (e.g., the letters *s-h-i-p*) and a signified, which is the understandable part of the sign, or the semantic content associated with the signifier (e.g., the meaning of the word "ship"). The signified may be broken down into semes. For example, the signified 'ship' contains semes such as /navigation/, /concrete/, and others. An isotopy is formed by repeating one seme. In "There was a fine ship, carved from solid gold / With azure reaching masts, on seas unknown" (Émile Nelligan, "The Golden Ship"), the words "ship", "masts" and "seas" all contain the seme /navigation/ (as well as others), thereby creating the isotopy /navigation/.

1.1.2 SYMBOLS USED

The standard symbols given in the table below are used to distinguish between (1) the sign (the word or lexia): "concrete"; (2) the signified that it conveys: 'concrete'; (3) the signifier associated with this sign: *concrete*, which is composed of the phonemes *k-o-n-k-r-E-t* and the letters *c-o-n-c-r-e-t-e*; (4) the seme: /concrete/ (in 'knife', for example) or (5) the isotopy: /concrete/ (in "steel knife", for example); and (7) the semantic class: //concrete// (which contains the signifieds 'house', 'cat', and 'wind', for instance). Explanations will be given later concerning symbols 6 and 8.

¹ In actuality, the signifier and the signified are both mental constructs, and in this respect, they derive from understanding and not perception (and this is why we have placed "perceptible" in quotation marks). Unlike the signified, the signifier (e.g., a phoneme, as in phonology) does have correlates in the physical world (e.g., a phoneme taking form as a particular sound, which is the subject of phonetics).

Symbols used

	ELEMENT	SYMBOL	EXAMPLE
01	sign	"sign"	"water"
02	signifier	<i>signifier</i>	<i>water</i>
03	signified	'signified'	'water'
04	seme and isotopy	/seme/ and /isotopy/	/light/
05	case	(CASE)	(ERG)
06	semic molecule (when the relations between semes are not specified by cases)	/seme/ + /seme/	/dark/ + /negative/
07	class (semantic class, to be specific)	//class//	//times of day// (day and night)
08	interpretive rewriting	rewriting or source element → rewriting	<i>rite</i> → <i>right</i> "draft" (current of air) → "draft" (military conscription) 'eagle' → United States of America

1.1.3 SEMANTIC COMPONENTS

In interpretive semantics, four **components** make up the semantic plane of texts (the plane of content, or signifieds, as opposed to the plane of expression, or signifiers): **thematics** (the invested content), **dialectics** (states and processes and the actors they involve), **dialogics** (modal evaluations, such as veridictory (true/false) and thymic (positive/negative) evaluations; see the chapter on dialogics) and **tactics** (the linear sequencing of content).

NOTE: MICROSEMANTICS, MESOSEMANTICS AND MACROSEMANTICS

Microsemantics is associated with the lower levels of the text (from the morpheme to the lexia), **mesosemantics** with the intermediate levels (from the functional syntagm to the period; this level can go beyond the sentence) and **macrosemantics** with the higher levels of the text (beyond the period and up to the text level). To simplify, we will associate the three levels with the word, the sentence and the text, respectively.

1.1.4 TYPE/TOKEN, MORPHEME/LEXIA, SEMEME/SEMIA

Semantic units operate on two levels. The **type** is a unit that is manifested to varying degrees through its **tokens**. For example, the content of the morphemes "water" and "love", independent of context, are types, and their actual content can vary depending on their tokens, or occurrences, in different expressions and sentences.

The minimal linguistic sign is called the **morpheme**. The **lexia** is a functional unit that includes more than one morpheme. Sometimes morphemes overlap in a single linear position; for example, in the French lexia "*eau*", units known as "zero morphemes" that indicate grammatical gender and number are "superposed" onto the morpheme containing the defining semes /concrete/, /liquid/, and so on. A lexia may correspond to one word or more than one word ("water", "brussel-s sprout-s", "walk-ing"). The word is a unit that is quite easily definable by its graphic signifiers – it is preceded and followed by a space – and for this reason, we favor it over the lexia. A **sememe** is the signified of a morpheme and a **semia** is the signified of a lexia.

NOTE: THE SEMEME AND THE WORD

In order to simplify representations of sememe analyses, a sememe is generally designated by the word in which it occurs (for example, 'fuse' and 'spirit' stand for the sememes 'fus-' (cf. "fusion") and 'spir' (cf. "inspire")). The generic term *signified* includes the *sememe* (the signified of a morpheme) and the *semia* (the signified of a lexia), but also encompasses other semic groups that act on the same level as the morpheme and the lexia or on higher levels: the syntagm, the period (a group of sentences, more or less), the section (a chapter, for instance), and the text. Semic molecules, for example, are found at all levels of analysis.

1.1.5 SEMES AND SEMANTIC CLASSES

The signified of any semantic unit can be broken down into **semes**, or features of content. A **generic seme** indicates that the sememe belongs to a **semantic class** (a semantic paradigm, made up of sememes). A **specific seme** distinguishes a sememe from all other sememes of the same class. The specific semes of a sememe constitute its **semanteme**; the generic semes make up its **classseme**. There are three kinds of generic semes: **microgeneric**, **mesogeneric** and **macrogeneric**. These correspond to three kinds of semantic classes: **taxemes** (the minimal classes by which sememes are interdefined), **domains** (which are linked to the social context and correspond to spheres of human activity; dictionary field labels exemplify this, as in *chem.*, *phys.*) and **dimensions** (the most general of classes, grouped by oppositions, such as //animate// vs. //inanimate//, //concrete// vs. //abstract//, //human// vs. //animal//, //animal// vs. //plant//, etc.).

To give an example, the taxeme //tableware// (eating utensils) includes three sememes. Each one contains the microgeneric seme /tableware/ and is distinguished from the other sememes of the same taxeme by a specific seme: /for piercing/ in 'fork', /for cutting/ in 'knife' and /for containing/ in 'spoon'. Since this taxeme comes under the domain //food//, the three sememes also contain the mesogeneric seme /food/. And finally, the three

sememes are also members of the common dimensions that define macrogeneric semes, like /inanimate/. (The term "inanimate" is not used to designate things that are dead or do not move, but things that cannot be alive, such as a rock or freedom.)

1.1.6 INHERENT/AFFERENT AND ACTUALIZED/VIRTUALIZED SEMES

A seme belonging to a sememe's type is called an **inherent seme**, and in context it is **actualized** (that is, activated) by default, unless there is some instruction to **virtualize** it (neutralize it). **Afferent semes** are semes that are present only in the sememe's token, that is, only by contextual indication. To simplify, we will say that if a seme is present in context, it is actualized; if it should normally have been present but is not, it is virtualized.

For example, in "albino crow", the inherent seme /black/ found in the type for the sememe 'crow' is virtualized in the context of this sememe's token, because this crow is said to be albino. On the other hand, the afferent sememe /white/ is actualized in this token. As we can see, the concepts of actualization and virtualization come in very handy in describing rhetorical figures such as the oxymoron (as in "black sun", from Nerval's poem).

NOTE: DEGREES OF ACTUALIZATION

Actualization occurs by degrees (as does virtualization, no doubt). Because of this, a seme can be salient or not salient (normal). In "the black crow is flying", /black/ is salient in 'crow'; in "the crow is flying" it is not salient in 'crow'. Theoretically, one could have a scale with three degrees: salient/normal/attenuated (or minimized, subdued), but it remains to be seen how one would distinguish between normal and attenuated.

NOTE: DIALECT, SOCIOLECT AND IDIOLECT

A text's meaning arises from the interaction of three systems: (1) the **dialect**, or functional language (as opposed to the historical language), (2) the **sociolect**, which is the usage of a dialect specific to a genre or a discourse (not a social group), and (3) the **idiolect**, which is a specific enunciator's usage of a language and other social norms. For example, in Baudelaire's texts, the seme /negative/, which is associated with *spleen*, women and nature, can be traced to the dialect, the sociolect and the idiolect, respectively. *Spleen* is a pejorative word by definition in French; the disparagement of women was quite common at the time, especially in literary discourse; and the devaluing of nature is more individual. The status of the seme /negative/ is different in each case: it is inherent in the first, sociolectally afferent in the second, and idiolectally afferent in the third case. Note that not all semes are necessarily sociolectal or idiolectal. For example, in "the blue wall", the seme /blue/, which is afferent in 'wall', is neither sociolectal nor idiolectal; it is said to be contextually afferent.

1.1.7 METAPHORICAL/SYMBOLIC CONNECTIONS

There are two possible kinds of connections between sememes (or groups of sememes). A **metaphorical connection** links two sememes that are present in a linguistic chain (as in a comparison). A **symbolic connection** (for example, the *in absentia* metaphor, where the compared term is absent) links two sememes, one of which is present in the chain, the other of which is present in the reading: In the political utterance "The Eagle overcame the Bear", ['United States'] and ['USSR'] are rewritings that are present only in the reading. The two connected sememes have at least one incompatible (generic) seme and at least one identical (specific) seme. For instance, in the expression "this woman is a flower", the metaphorical connection involves the incompatible semes /human/ and /plant/, while a seme like /beauty/ is present in both sememes.

1.1.8 ISOTOPY

The iteration of a single seme (either inherent or afferent) in context forms an **isotopy**. Isotopies are distinguished not only by the name of the seme on which they are based (for instance, /inanimate/, /religion/), but also by the type of seme involved (specific/micro-, meso-, or macrogeneric). For example, the sentence "I only use a knife for picking up peas" contains the (mesogeneric) isotopy /food/, which indexes the sememes 'knife' and 'peas'. In addition, it virtualizes the inherent specific seme /for cutting/ in 'knife' and actualizes the afferent seme /for picking up/.

Isotopy creates an equivalence between the signifieds containing the seme that defines the particular isotopy. Allotopy is the oppositional relation that arises between two sememes (or groups of sememes, such as a lexia) containing incompatible semes (as in 'black snow').

1.1.9 MEANING/SIGNIFICATION AND READING

All of the semes actualized in a context, whether inherent or afferent, define the **meaning** of that particular unit. The **signification** is the set of (inherent) semes of a given unit defined out of context. For instance, in "albino crow", the afferent seme /white/ is part of the meaning of 'crow' in this context; however, the seme /white/ is not part of the signification (decontextualized) of 'crow', whereas the seme /black/ is.

Interpretation is the process of assigning meaning to a linguistic chain. Interpretation produces a **reading**. **Intrinsic interpretation** reveals the semes present in a linguistic chain and yields either a **descriptive reading**

or a **methodologically reductive reading** (that is, a purposely restricted one). **Extrinsic interpretation** adds semes, whether intentionally or not (a **productive reading**) or mistakenly leaves semes out (a **reductive reading**).

1.1.10 INTERPRETANT, TOPOS AND REWRITING

An **interpretant** is an element of a text or its surroundings (non-linguistic context) that allows one to establish a semic relation, that is, to definitively actualize or virtualize at least one seme. In "albino crow", the interpretant that justifies virtualizing the seme /black/ and actualizing the seme /white/ in 'crow' is the presence of the signified 'albino'. For example, when the phonic signifiers are identical (homophonic), as in Hamlet's response to King Claudius: "Not so, my lord: I am too much in the sun [\rightarrow |son|]", then the mesogeneric semes /weather/ and /filiation/ can be realized simultaneously. A **topos** (*topoi* in the plural) is a socially-normed interpretant (one defined by a sociolect) that can often be expressed as an axiom (e.g., *the countryside is preferable to the city in rural legend*).

A **rewriting** is an interpretive operation of the type $X \rightarrow |Y|$, by which one or more signs, signifiers, or signifieds are rewritten as one or more different signs, signifiers, or signifieds. The source unit (X) is part of the object-text, and the target unit (Y) is part of its reading (although it can have correspondences in the source text). From a practical standpoint, rewriting allows one to clearly designate the element being analyzed, particularly in cases of symbolic connection and homonymy (e.g., it allows one to distinguish draft |'current of air'| from draft |'military conscription'|).

1.1.11 SEMIC MOLECULES AND ISOTOPIC BUNDLES

A semic **molecule** is a cluster of at least two co-recurrent (appearing together) semes (especially specific semes²). In Nelligan's poem "The Golden Ship", there is a semic molecule made up of the semes /precious/ + /dispersion/. It appears at least three times: (1) the "streaming hair" ("*cheveux épars*") of the beautiful Goddess of Love who was (2) "spread-eagled" ("*s'étalait*") at the ship's prow, and (3) the sinking of the ship's treasure, which the sailors "disputed amongst themselves" ("*entre eux ont disputés*"). This molecule is in opposition to another, with which it overlaps partially, composed of /precious/ + /concentration/, and which is found in the "solid gold" ("*or massif*") of the ship, and even the "blazing sun" ("*soleil excessif*").

It is essential to distinguish between the molecule in the abstract (the type) and its manifestations (the tokens)³. The tokens do not all necessarily possess the same number of semes as the molecule's type. For example, we consider the molecule /body/ + /precious/ + /dispersion/ to be valid for the three manifestations given above, although the third manifestation is less representative of the molecule's type, since the treasure bears no relation to the human body (possible metaphorical meanings aside). The variations in typicality of the tokens can be interpreted as variations in the salience of the molecule (the intensity of its presence or degree of actualization). One can study the formation, maintenance (full or partial) and eventual dissolution of a semic molecule by following the thread of its tokens⁴.

An **isotopic bundle** is a group of isotopies that index more or less the same units (the same sememes, in the most exacting analysis). A molecule engenders or produces an isotopic bundle (usually made of specific isotopies).

NOTE: RELATIONS BETWEEN SEMES AND BETWEEN ISOTOPIES

There are several kinds of possible relations between semes and between the isotopies they form, such as: opposition, homologation, simple presupposition (where the presence of one seme implies the presence of another), reciprocal presupposition (where the presence of one seme implies the presence of another and vice versa), mutual exclusion (where two semes cannot appear at the same time), and comparison (where one isotopy is comparing and the other compared, as in /bird/ and /poet/ in Baudelaire's "Albatross"). Isotopies can often be grouped as oppositions (as in /animal/ vs. /human/). These oppositions may arise through homologation (for example, if /life/ is to /death/ as /human/ is to /animal/ in a text). The elements on the same "side" of a homology (in this case, /life/ and /human/ on the one side and /death/ and /animal/ on the other) constitute a group of semes and isotopies that presuppose each other reciprocally (/life/ and /human/ form one molecule, whereas /death/ and /animal/ form another)⁵. When there is a semic molecule present, it is because the isotopies corresponding to the constituent semes of the molecule form a group of isotopies, known as an isotopic bundle; these isotopies tend to index, or include, the same signifieds at the same time, thereby producing the molecule.

² One can broaden the usual meaning of "molecule" (a cluster of specific semes) to include generic and/or specific semes. In addition, we propose the notion of a **hybrid molecule** for a semic cluster that contains at least one semantic case.

³ In order to distinguish between types and tokens of semic molecules, one can use the terms "**semic molecule**" (a term with a restricted sense) and "**semic complex**".

⁴ As an element of macrosemantic dialectics, an **actor** is a semic molecule lexicalized by its tokens at the mesosemantic level, which are called **actants** (which have no direct relation to Greimas' concept of the same name). For example, the actor 'cicada' in "The Cicada and the Ant" is manifested by the following tokens, in order of tactical appearance: 'Cicada', 'her', 'herself', 'she', 'she', 'she', 'I', 'my', 'mendicant', 'I', 'I', 'You'. An actor is not limited *a priori* to any particular class of natural ontology (it can be human, an object, a concept, etc.).

⁵ Each "side" of the homology thus defines a semic molecule and an isotopic bundle that are in opposition with the molecule and the bundle on the other side. However, not every molecule or every bundle has to be part of a homology.

1.1.12 SEMANTIC CASE

Semes and cases are the two **constituent** elements of signifieds (not to be confused with the four semantic *components*). **Semantic cases**, which are limited in number, are semantic primitives or universals of method (they are not *de facto*)⁶. By integrating semantic cases into the typology of the parts of the signified, we can arrange the semes of a single signified into a structure, which is a step further than simply making an inventory of them. Then the semes become elements interconnected by cases (see the chapter on semantic graphs). If a semic structure is repeated, then we have a semic molecule.

Interpretive semantics uses primarily (although not exclusively) the following semantic cases: (1) ACC (accusative): a patient of an action; (2) ATT (attributive): a characteristic; (3) BEN (benefactive): an entity benefiting from something; (4) CLAS (classitive): an element of a class; (5) COMP (comparative): a comparison; (6) DAT (dative): an entity receiving a transmission; (7) ERG (ergative): the agent of an action; (8) FIN (final): a goal; (9) INST (instrumental): a means used; LOC (locative): (10) spatial location (LOC S) or (11) temporal location (LOC T); (12) MAL ("malefactive"): an entity affected negatively by something; (13) PART (partitive): a part of a whole; (14) RES (the resultative): result, consequence.

For example, if we say that a woman is beautiful, we have the following semantic structure: the semes /woman/ and /beautiful/ linked by the attributive case (ATT). In our example of a molecule, the semes /precious/ + /dispersion/ are connected by an attributive link to what they describe: /hair/, /Goddess/, and /treasure/. To give another example, the type for the sememe 'kill' admittedly covers a process involving the semes /inanimate/ and /animate/, but these semes vary in the ergative (the thing doing the killing can be animate or inanimate), whereas only the second seme is found in the accusative (whatever is killed is, by definition, animate; although /animate/ could be virtualized in the context and replaced by /inanimate/, as in the expressions "killing time" and "Kill your television", for example).

NOTE: ISOTOPIES INVOLVING SEMES AND CASES

Theoretically, one could distinguish between isotopies formed by semes and isotopies formed by cases. But establishing an isotopy means that one is in fact dealing with cases, knowingly or unknowingly, explicitly or not. We are actually looking for not just a specific seme, but a specific seme marked with a specific case, that is, a hybrid molecule made up of a seme and a case. Consider the macrogeneric isotopies /animate/(living being) and /inanimate/. We would spontaneously index the signified 'glass' in the second isotopy. However, the glass is intended for a human being, which is animate. In other words, we are actually looking for a hybrid molecule made up of the seme /animate/ or /inanimate/ and the attributive case (ATT), and not the seme /animate/ or /inanimate/ with the final case (FIN), which represents the proposed goal. In the first case, 'glass' is excluded from the isotopy; in the second case it is included. Our example may be a bit extreme: the seme /animate/ may not be in the final case in our word; however, we simply want to show that matters of case are never absent in an isotopic and molecular analysis. This being the case, there are two possible methods of analysis: 1. One must have identical cases as well as identical semes in order to establish a semic recurrence that may be used for an isotopy or a molecule. 2. Identical semes alone can be used to establish a valid semic recurrence. In our analysis of Magritte's painting, we will occasionally describe what the effect is on the indexation of signifieds when we include the case associated with the seme that forms the isotopy.

1.1.13 THE SEMANTIC GRAPH

Semantic graphs (based on Sowa, 1984; see the chapter on semantic graphs) are a convention used to visually represent semantic structures (semes and the cases that link them together). Cases are the **links** between the semes (actors, for example), which are structured as **nodes**. Two formats are used for semantic graphs: the proposition and the straight graph. The proposition is a textual format, with the links shown in brackets and the nodes in parentheses. For example, the structure mentioned previously could be represented thusly: [animate] or [inanimate] ← (ERG) ← [KILL] → (ACC) → [animate]. In the strictly graphic format, we generally use ellipses and rectangles, respectively. In both formats of a semantic graph, the arrows indicate the direction of the relations between nodes.

1.2 EXAMPLE: ANALYZING THE TITLE OF A NOVEL: *BLACK SNOW*

It would be impossible to give a complete presentation of the possible applications of interpretive semantics in the assigned space. More applications using dialogics and semantic graphs may be found in other chapters.

In this section we will give a brief semic analysis of the title of a novel: *Black Snow*, by the prominent French-Canadian author, Hubert Aquin (1978).

Semic analysis of the title of a novel by Hubert Aquin

⁶ Like semes, cases will be inherent/afferent and actualized/virtualized.

'sememe'	'Snow'	'Black'	/isotopy/	molecule (isotopic bundle)
seme /precipitation/	actualized seme microgeneric inherent	∅	∅	
/color/	∅	actualized seme microgeneric inherent	∅	
/whiteness/	virtualized seme specific inherent	∅	∅	
/blackness/	actualized seme specific afferent (qualifier)	actualized seme specific inherent	specific isotopy /blackness/	molecule /blackness/
/dysphoric/	actualized seme (salient) macrogeneric afferent	actualized seme macrogeneric afferent	macrogeneric isotopy /dysphoric/	+ /dysphoric/

A few details are in order:

Independent of context (at the level of *langue*), the sememe 'Snow' contains the inherent microgeneric seme /precipitation/ (which refers to the taxeme //precipitation//, which includes the sememes 'snow', 'rain', etc.) and the specific inherent seme /whiteness/ (which distinguishes between 'snow' and 'rain', for example, within the taxeme). In context, the second seme is virtualized by the effect of the qualifier: the snow is described as black, and by correlation, the afferent seme /blackness/ is actualized for the same reason.

Independent of context, the sememe 'Black' contains the microgeneric inherent seme /color/ (which refers to the taxeme of //colors//, which includes sememes like 'black', 'white', etc.) and the inherent specific seme /blackness/ (which distinguishes between 'black' and 'white', for example, within the taxeme). Both of the semes are actualized in context. Since the seme /blackness/ is actualized in two different signifieds, 'snow' and 'black', the isotopy /blackness/ is created.

The title refers to a *topos*, or literary (and non-literary) common place that renders black as a dysphoric, harmful element (for instance, one finds it in Nerval: "black sun", "black spot"). For this reason, the macrogeneric afferent seme /dysphoric/ is actualized in 'black' (and since it is actualized through a *topos*, it can be considered as sociolectally afferent).

Since the snow is said to be black, the same seme is actualized in 'snow'; but the sememe 'snow' is itself a potential carrier of the afferent seme /dysphoric/, also by virtue of a *topos*. Therefore, both semes reinforce each other mutually and become salient as a result; the two sememes serve as interpretants for each other. However, the effect of salience, or prominence, is achieved primarily to the noun's advantage, due to the direction in which qualifiers operate (actualizations generally go from the adjective to the noun). As the seme /dysphoric/ is actualized in two different signifieds, the isotopy /dysphoric/ is formed. This macrogeneric seme refers to the dimension //dysphoria//, which is in opposition to the dimension //euphoria//. (These semes can also be viewed as modal values: see the chapter on dialogics).

Moreover, since the semes /blackness/ and /dysphoric/ are co-recurrent in two different signifieds, the title thus contains the semic molecule /blackness/ + /dysphoric/.

NOTE: OTHER SEMES PRESENT IN THE TITLE

Obviously, other semes are featured in the title, specifically, /woman/ (see Aquin's diary (cited in Aquin, 1995, XXXIV: "*la nuit fémininoïde*", "*la femme obscure*", "*la femme est noire*", etc.) and /literature/ (cf. the "*roman noir*", which, like *Black Snow*, is characterized by eroticism and religious references). We do not claim to have exhausted the meaning of this title, but let us finish with a very probable symbolic connection. The sign "snow", as we know, can refer to "cocaine powder" (*Le Petit Robert* and *The American Heritage Dictionary*). If this homonymic wordplay were recognized, the symbolic connection would be based on the opposition between the mesogeneric inherent semes /weather/ and /addiction/ (and/or the microgeneric inherent semes /precipitation/ and /drugs in powder form/) of 'snow' and ['cocaine'] on the one hand, and their identical specific inherent semes /whiteness/ on the other. (There are undoubtedly other identical specific semes).

According to some who were close to him, "Aquin was addicted to medications (particularly amphetamines), which he had used liberally since his youth [...] to maintain his "dynamism" (Aquin, 1995, p. 175). In 1963 he went through a detox program during the three months of hospitalization following a suicide attempt (Aquin, 1995, p. 202). There is a significant isotopy /medication-drugs/ in several of his works (for example, *Next Episode* and "*De retour le 11 avril*"), and in *Black Snow* (1978, 262), Linda says: "*C'est comme si j'étais intoxiquée par un divin poison...*" ["I felt like I had been drugged with a divine poison."]

1.3 AN ANALYTICAL METHODOLOGY: SEMIC TABLES

We recommend using three kinds of semic tables.

1. In the heuristic, or exploratory phase of analysis, one begins by briefly picking out the semes or isotopies present in the text, or by formulating hypotheses based on genres, eras and authors (for example, the isotopies /countryside/, /city/, etc. in a text from rural legend). The heuristic table is for recording these preliminary findings.

An example of a heuristic semic table

Signified no.	Reference no. (word, verse, line, page, etc.)	SIGNIFIED	SEME	JUSTIFICATION
1	v1	'signified 1'	/X/, /Y/	
2	v1	'signified 2'	/Y/	
3	v1	'signified 3'	/X/	

NOTE: NAMING THE SEME AND THE ISOTOPY

It is particularly important to select an appropriate name for the seme and the isotopy based on it. The idea is to choose the name that will yield the richest analysis in quantitative and qualitative terms, namely by adjusting the degree of generality/specificity (e.g., from /action/ to /movement/ to /dance/ to /waltz/ or the reverse). Since any signified contains several semes, one signified may be present in several of the isotopies selected for analysis, perhaps even in two incompatible isotopies.

2. In the strictly analytical stage of the analysis, one selects a few semes or isotopies that are of interest either intrinsically (e.g., the isotopy /aerospace/ in a love story) or because of the relations they maintain with other semes or isotopies. The analytical table can be used to record actualizations of a given seme in the text. One would create as many analytical tables as there are isotopies one wants to detail (+ indicates an actualized seme, no plus sign a non-actualized seme, and the minus sign a virtualized seme).

An example of an analytical semic table

SIGNIFIED	SEME /X/	JUSTIFICATION
'signified 1'	inherent	
'signified 2'		
'signified 3'	afferent	

NOTE: LIMITING CRITERIA

In order to streamline the tables and the analysis, one can use limiting criteria in one's methodology, for instance, by excluding all or some of the free grammemes, as they are called (prepositions, pronouns, conjunctions, adverbs, articles, non-qualifying adjectives). In addition, rather than including all of the signifieds of the text in our table, one can select only the signifieds that are indexed by one of the isotopies selected for the analysis (but still include any signifieds whose non-indexation calls for comment). This approach is useful in analyzing longer texts.

3. A comprehensive table is used to compare the indexations of signifieds in the various isotopies selected in order to distinguish the presence of molecules (in our table, a molecule /X/ + /Y/ appears in signifieds 1 and 2).

An example of a comprehensive semic table

SIGNIFIED	SEME /X/, mesogeneric	SEME /Y/, mesogeneric	JUSTIFICATION
'signified 1'	inherent	afferent	
'signified 2'	inherent	inherent	
'signified 3'	afferent	(virtualized)	

The comprehensive table makes it easy to identify the logical relations between isotopies and between semes, and is especially helpful in identifying semic molecules⁷.

NOTE: JUSTIFICATIONS

Where appropriate, justifications are given in the last column of the table or in the footnotes for: (1) a seme's actualization (especially for afferent semes, which are theoretically more questionable than inherent semes); (2) a seme's virtualization (e.g., in "black snow", the inherent seme /whiteness/ is virtualized; in this context, 'snow' cannot be part of a hypothetical isotopy /whiteness/). Sometimes one needs to give evidence for (3) non-actualization or (4) non-virtualization, in cases where the reader might misjudge a specific seme's status as actualized or virtualized. In every case, the reasons cited will be interpretants. One must also give evidence for the type of seme involved: why is it inherent/afferent or specific/micro-, meso-, macrogeneric, and so forth?

2. APPLICATIONS

⁷ The significance of each molecule one identifies is proportional to the significance of each of its semic actualizations; this is why isotopic analysis must be conscientiously done before identifying the molecules, or at least before "visually" identifying them with a table.

2.1 APPLICATION I: "THE GOLDEN SHIP" BY EMILE NELLIGAN

* * *

"The Golden Ship"
Émile Nelligan (1960)

There was a fine ship, carved from solid gold
With azure reaching masts, on seas unknown.
Spread-eagled Venus, naked, hair back thrown,
Stood at the prow. The sun blazed uncontrolled.

But on the treacherous ocean in the gloom
She struck the great reef where the Sirens chant.
Appalling shipwreck plunged her keel aslant
To the Gulf's depths, that unrelenting tomb.

She was a Golden Ship: but there showed through
Translucent sides treasures the blasphemous crew,
Hatred, Disgust and Madness, fought to share.

How much survives after the storm's brief race?
Where is my heart, that empty ship, oh where?
Alas, in Dream's abyss sunk without trace.

* * *

We will present an isotopic analysis of Nelligan's "The Golden Ship" (1879-1941), the best-known poem of the greatest French-Canadian poet of the 19th century (he was institutionalized from 1899 on)⁸.

Our isotopic analysis will be simplified in two ways. Firstly, we will address only one isotopy here – the one relating to the domain /navigation/. Secondly, we will not examine every possible signified that could be indexed by this isotopy, but retain only those signifieds represented by nouns, verbs and qualifying adjectives (this eliminates all of the pronouns that refer to a word containing the seme /navigation/, such as "she" for "ship" and "where" for "reef"). In this way we can steer clear of some of the most problematic indexations, especially those relating to possible plays on words (in French, we have "il" and "île", "aux" and "eau", for example).

Limited space prohibits us from delving into another extremely interesting isotopy that also relates to a domain: /sexuality/. While the first isotopy is especially obvious, the second is no less evident: It has a solid foundation in words and syntagms like "naked" ("*chairs nues*"), "Sirens" and obviously, "Venus" ("*la Cyprine d'amour*"), which we will examine below. The main difficulty concerning this second isotopy is in knowing where to draw the line between an adequate interpretation and an overinterpretation (for instance, should one interpret "storm" ("*tempête brève*") as a metaphor for coitus, and "masts" as a phallic symbol?). We will advance the hypothesis that our two isotopies are joined in a comparative relation, with navigation as the comparing and sexuality as the compared isotopy (which does not mean that only signifieds indexed by /navigation/ can be indexed by /sexuality/)⁹.

NOTE: OUR TREATMENT OF METAPHORICAL COMPARISONS AND METAPHORS

We have adopted interpretive semantics' principles for addressing metaphorical comparisons. We have two examples taken from the text we are analyzing. In the metaphorical comparison "gulf" - "tomb", each of the two elements remains within its respective domain and within the isotopy associated with it, that is, /navigation/ and /funeral rite/ (the same applies to "the crew" on the one hand, and "Hatred", "Disgust" and "Madness" on the other). By contrast, in the metaphor "storm" - "coitus" (a word not present in the text) – a metaphor that is subject to debate – "storm" belongs simultaneously to the isotopy /navigation/ and the isotopy /sexuality/, insofar as it serves to manifest "coitus". There do not seem to be any words that index the isotopy /navigation/ by means of a metaphor; this is why we have given an example from the isotopy /sexuality/.

The table below shows the main signifieds indexing the isotopy /navigation/ (actualized seme: +; inherent seme: *i*; afferent seme: *a*; doubt about actualization or inherent/afferent status: ?).

⁸ This sonnet, which was written sometime between May 26 and August 9, 1899, is strongly reminiscent of Rimbaud: "A great golden ship, above me, flutters many-colored pennants in the morning breeze." ("*Farewell*", from *A Season in Hell*, a collection that came out in October 1873)..

⁹ In addition, the isotopy /navigation/ is also the comparing term for an isotopy that we will call /existential/; this comparative relation is "revealed" in the line "Where is my heart, that empty ship, or where?".

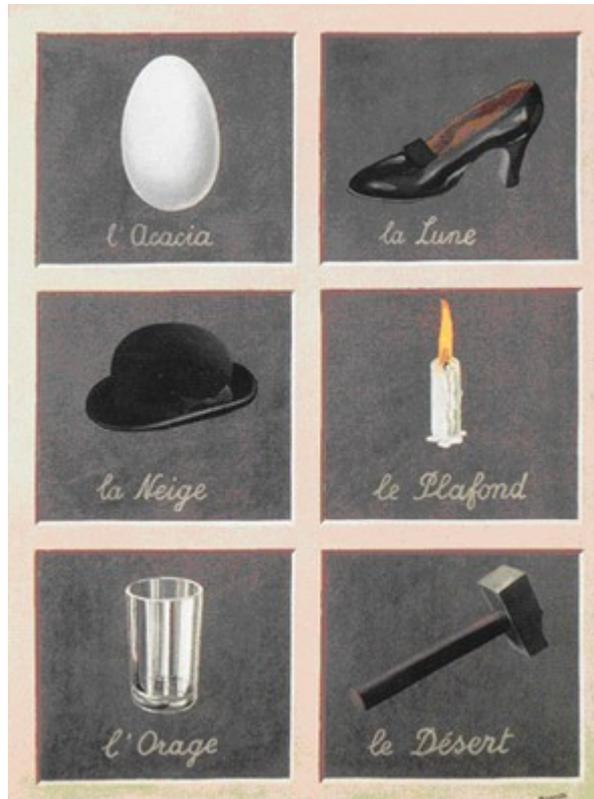
The isotopy /navigation/ in "The Golden Ship"

WORDS AND SIGNIFIEDS	THE SEME AND ISOTOPY /NAVIGATION/		
Ship	+	i	Type of boat
masts	+	i	
azure	+?	a	"Her[aldry]. The color blue. The blue sky." (<i>The American Heritage Dictionary</i>)
seas	+	i	
Cyprine	+	a	[Found in the original French version.] "From the Latin <i>Cypris</i> , from the Greek <i>Kupris</i> , Aphrodite's surname" (<i>Le petit Robert</i>), a goddess worshipped on the island of Cyprus. As we know, Aphrodite (Venus) was born of the water. In the context, she is a benevolent feminine "aquatic" figure in opposition to the Sirens, who appear later. As a possible metaphor for a figurehead, the word is also indexed by /navigation/. Since these interpretants are combined, we conclude that the seme is especially salient. In addition, this word is undoubtedly also indexed by the isotopy /sexuality/. Being derived from Aphrodite's surname, it automatically relates to love, particularly in its sensual meaning. Moreover, the only meaning reported in <i>Le petit Robert</i> is: " <i>Sécrétion vaginale, signe physique du désir sexuel</i> " ["Vaginal secretion, a physical sign of sexual desire"], a meaning attested in the <i>Petit Robert</i> around 1970. And in fact, it appeared well before that, as Gervais (1994, pp. 38-39) proves in this letter from Apollinaire to Louise de Coligny (13 January 1915): " <i>le vagin royal où bouillonne la cyprine voluptueuse que tu me prodigues ô chérie et d'où s'épanche l'or en fusion de ton pipi mignon</i> " (quoted from Gervais, 1994, p. 39, no translation available). And lastly, as a possible metaphor to designate a figurehead, the word is also indexed by /sexuality/, as figureheads are often bare-breasted.
prow	+	i	The forward part of a ship's hull, the bow.
vint	+?	a	[Found in the original French version.] Assumes navigation: a voyage on water
reef	+	i	"A strip or ridge of rocks, sand, or coral that rises to or near the surface of a body of water." (<i>The American Heritage Dictionary</i>)
Ocean	+	i	
Siren	+	i?	"One of a group of sea nymphs whose sweet singing lured mariners to destruction on the rocks around their island." (<i>The American Heritage Dictionary</i>)
shipwreck	+	i	
keel	+	i	The submerged part of the hull of a boat
depths	+	a	In this context, the depths referred to are the ocean's.
Gulf	+	a	This type of gulf is not marine by definition, making the seme afferent: "A deep wide chasm; an abyss." Note the following meaning, although it does not seem to apply directly here: "Something, such as a whirlpool, that draws down or engulfs" (<i>The American Heritage Dictionary</i>).
Ship	+	i	
flancs	+	i	" <i>Partie latérale de certaines choses. Flanc d'un vaisseau.</i> [The lateral part of certain things. The side of a boat.]" (<i>Le petit Robert</i>) The word in the English translation, "sides", contains no inherent or afferent seme.
treasures	+	a	A treasure is not necessarily from a ship, although it often is in literary texts, for example.
sailors	+	i	
tempête	+	i?	The word " <i>tempête</i> " in the original may contain an inherent seme, based on the <i>Petit Robert</i> : " <i>Violente perturbation atmosphérique [...] Spécial[ement] Ce temps sur mer, qui provoque l'agitation des eaux et met les navires en péril.</i> " ["Violent atmospheric disturbance [...] esp. weather at sea of the kind that produces high waves, endangering ships"]. The word "storm" in the translation contains no inherent seme.
ship	+	i	
sunk	+	i	"To descend to the bottom; submerge" (<i>The American Heritage Dictionary</i>)
abyss	+	i	"An immeasurably profound depth or void" (<i>The American Heritage Dictionary</i>).

2.2 APPLICATION II: *THE KEY TO DREAMS*

* * *

The key to dreams
Magritte (1930)



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* * *

It is not the intent of this book on applied semiotics to present the theory of visual semiotics. We will steer clear of certain problems that are as challenging as they are crucial from a theoretical standpoint, and focus on a few methodological questions. We want to show how we can apply some of the principles and concepts of textual semic analysis and interpretive semantics (e.g., the oppositions specific/generic and actualized/virtualized seme), with some adjustments, to the analysis of images, with or without text.

2.2.1 THE SEME

Our point of departure, which calls for some fine-tuning from a theoretical perspective, is that textual and pictorial signifieds are identical and that they may be broken down into semes. A seme by any name is identical to another seme of the same name, whether they are part of the same semiotic system (text, images) or not.

2.2.2 SEGMENTATION

In the semiotics of images, the units seem to lend themselves to alternative segmentations using signifieds of differing magnitudes. Switching from one segmentation to another can cause multiple signifieds to be differentiated in one signified and possibly generate new semic iterations and/or reinforce existing ones. Our analysis features one position per compartment for the textual signified (thereby merging the two words of the legend for each compartment into one signified). It also features one position per compartment for the pictorial signified. For example, although the seme /solid/ is found in the whole signified of the hammer image in the painting, and also in the signifieds corresponding to its two parts, the handle and the head, we list the seme /solid/ only once, for the whole image of the hammer.

2.2.3 ITERATION AND SEMIC MOLECULES

Iteration, recurrence and semic repetition are the terms we use for inter-semiotic repetition (e.g., in a text and an image) and intra-semiotic repetition (e.g., in a text) of a single seme in one object (e.g., a specific painting by Magritte). We prefer to avoid the term "isotopy", whose original meaning implies the successive repetition of one unit over time (more accurately, in different positions that can be sequenced relative to each other), which is problematic in still images.

To give an example of a semic molecule in Magritte's painting, /white/ + /small/ is a molecule occurring in 'egg' and 'candle'; we say that this molecule is intra-semiotic, since it is exclusively pictorial. The molecule /white/ + /curvature/ has occurrences in 'egg' and 'moon', and by this token, it is inter-semiotic. Just as for semic iterations, the way in which semic molecules are identified in an image depends on what sort of segmentation system is worked out, an issue mentioned earlier.

2.2.4 CATEGORIZATION

There is a distinction to be made between categorizing what is represented in an image and categorizing its lexical label. Categorization is an operation by which a unit becomes part of an ontological class, that is, a class of beings.

It is not immaterial that the hammer represented in the painting is the kind used for forging metal. In the *Larousse du XXe siècle* (1928-1933), Magritte's hammer corresponds to number 9 on the "Hammers" plate, that is, the "forging hammer". There are semic impacts due to the fact that this hammer is used for forging. For example, it provides an iteration of the semes /melting/ and /fire/, found in 'candle'. In addition, the seme /melting/ in 'snow' has a stronger presence than it would just in the context of 'candle'. Recognizing the frame and/or window depicted by the six-compartment grid will have semic implications as well. The window categorization is supported by the history of art in general: the notion of the painting as a window goes back at least to Alberti ("*fenestra aperta per donde io miri quello que quivi sara dipinto*", 1436) and Leonardo ("*pariete di vetro*") (see Clair, 1977); but it also appears in several other paintings by Magritte¹⁰. Recognizing the presence of a window allows us to establish an iteration /glass/ that indexes 'window' and 'glass', as well as an iteration /dwelling/ that indexes 'window', 'ceiling' and perhaps 'key'.

2.2.5 LEXICAL SELECTION

Lexical selection is the process of naming a category or a representative of the category.

In themselves, lexical labels for images have no influence on the semic content of the images. However, like several other modern painters, Magritte often uses homonymic shifts and transformations of set expressions in his titles and legends. Lexical labels are crucial in setting up these actual or potential "games". These hypothetical "word plays" on the textual signifier are of interest here only insofar as they can be used as interpretants for textual or pictorial semes. Let us take a case of homonymy: The presence of a sponge* in one of the versions of this painting, the chalky, handwritten letters, and the classroom parody of associating a simple image with a simple lexical item (supposedly to deliver meaning in a package) all point to the notion that the background of *The Key to Dreams* may be lexicalized in French as "*tableau*" ["blackboard"] //education//, with a shift to the homonym ["*tableau*"] [painting] //painting//. Homonymy, then, serves as a partial, but decisive interpretant to actualize at least one seme: /painting/. To give another example, it seems plausible to rewrite "*plafond*" ["ceiling"] as ["*fond*"] ["melts"], in correlation with the signified 'snow', the seme /water/ and of course, the image of a candle that is "melting" in the same compartment as the word in question.

In our analysis, we have chosen one lexical item for each of the six images. The lexical labels we have selected are as follows, with alternative lexical choices in parentheses: "egg" ("chicken egg"), "shoe" ("high-heeled shoe", "footwear"), "hat" ("cloche", "derby hat", "derby"), "candle", "glass" ("water glass", "drinking glass"?), "hammer" ("sledge hammer", "mallet", "forging hammer"). It is easy to see that this list has been methodologically restricted to iconic signifieds (signifieds that form recognizable, nameable images), by excluding malleable signifieds, and that the signifieds represented by the following lexical labels were not selected: "*tableau*" ["painting" or "blackboard"], "frame" or "window", "word" and "signature". In addition, we have also excluded from the textual part of our analysis the word "Magritte" (which appears as the signature depicted) and the title *The Key to Dreams* (*La clef des songes*).

¹⁰ In literature, Stendhal comes to mind; the novel is a mirror that we hold up as we travel down a road.

NOTE: THE HAMMER

The hammer is of special interest: Did Magritte know the specific function of the forging hammer, did he know its precise name, or did he know its function without knowing its name? One can ask the same questions concerning reception, for the model viewer and the empirical viewer. In our analysis, we have opted for the lexical label "hammer", but we have taken its categorization as a forging hammer into account in order to determine the presence of certain senses.

2.2.6 SEMIC ANALYSIS TABLE OF *THE KEY TO DREAMS*

Below is the semic analysis table for Magritte's painting. The legend for the symbols used appears at the end of the table¹¹.

¹¹ We would like to acknowledge Judith Langevin for her help with the preliminary version of this analysis.

Louis Hébert, Tools for Text and Image Analysis: An Introduction to Applied Semiotics

	signified /seme/ /a/, /b/, /c/...	Type of seme	Word 1 Acacia ¹²	Word 2 Moon	Word 3 Snow	Word 4 Ceiling	Word 5 Storm	Word 6 Desert	Image 1 [egg]	Image 2 [shoe]	Image 3 [hat]	Image 4 [candle]	Image 5 [glass]	Image 6 [hammer]
01	a concrete, b conceptual ¹³	mag	a	a	a	a	a	a	a	a	a	a	a	a
02	a animate (living being), b inanimate ¹⁴	mag	a	b ¹⁵	b	b	b	b ¹⁵	a	b	b	b	b	b
03	a nature, b culture	mag	a	a	a	b	a	a	a	b	b	b	b	b
04	a feminine, b masculine	mag ?	a ? ¹⁶	a ? ¹⁷					a ? ¹⁸	a ¹⁹	b ²⁰			b ²¹
05	a food, b botany, c clothing, d weather, e ornithology ²²	meg	b	d ? ²³	a ? ²⁴ d		a ? d	d	a e ²⁵	c	a ? c		a	
06	a edible, b inedible, c not applicable ²⁶	spe	b	c	a	c	c ²⁷	c	a	b	a ? ²⁸ b	b	a ? ²⁹ b	b
07	a hot, b cold ³⁰	spe		b ? ³¹	b	a ? ³⁵	b ? ³²	a b ? ³³	a ? ³⁴	a ? ³⁵	a ? ³⁵	a	b ? ³⁶	a ? ³⁷
08	a brightness, b darkness	spe	a ? ³⁸	a b ³⁹	a	b ? ⁴⁰	a b ⁴¹	a ⁴²	b ? ⁴³		a ? ⁴⁴	a	a ? ⁴⁵	a ? ⁴⁶
09	a white, b black, c gray, d other ⁴⁷	spe	d ⁴⁸	a ⁴⁹	a	?	? ⁵⁰	? ⁵¹	a	b	b	a d	d ⁴⁷	c d ⁵²

¹² The acacia is a tree with yellow flowers, certain species of which produce acacia gum, also known as arabic gum or Senegal gum. The mimosa is a type of acacia. In the usual meaning, "acacia" means "locust tree" or "false acacia" (*Le Petit Robert*). The context 'desert' tends to validate the first meaning; the context /ordinary object/ validates the second meaning.

¹³ We are using the term "conceptual" rather than "abstract" in order to avoid confusion with the meaning of the term "abstract" in art ("conceptual art" is a recognized term, too, of course, but is far less common).

¹⁴ Inanimate elements can be qualified depending on the initial state of the materials from which they are made. For instance, the hat and the handle of the hammer are made of animate things, of living products that have been "de-animated" (leather, wool and wood).

¹⁵ The desert in itself is inanimate and not very hospitable for animate beings. In our discussion, we mentioned the possibility of including the interaction between semantic cases and semes to create a "hybrid molecule". The desert is an example of this: on the one hand, it is in the ergative case if one considers it as acting aggressively toward some element marked as /animate/ in the accusative, and on the other hand, it is in a spatial locative case for this same element. The moon is an example of a space that is even more inhospitable to animate beings.

¹⁶ Should we associate the acacia with femininity because of its flowers and its aesthetic function?

¹⁷ The moon is traditionally associated with femininity, if for no other reason than it is said to govern the menstrual cycle, especially in context with fertility (the egg).

¹⁸ The egg undoubtedly conveys the semes /fertility/, /maternity/ and thus, /femininity/.

¹⁹ The shoe in this image (the token of a shoe) is feminine.

²⁰ The hat in this image (the token of a hat) is masculine.

²¹ Tools of this kind are traditionally associated with men, especially since this is a forging hammer, not a household hammer (one "aggravating" factor is that this painting dates from the late thirties, an era when women were more confined to traditional roles).

²² Indexing by domains is a complex process. As relevant as they appear to be, some domains cover only one signified; should one then increase the degree of generality in order to increase one's chances of including other signifieds in the domain? The domain //construction// would index 'hammer' (/tools// would work just as well) and possibly 'ceiling' (/dwelling// is more appropriate, and has the advantage of including //lighting// and possibly //construction//); acacia wood is apparently not used in construction or cabinet making. The moon is in the domain //astronomy// and the desert in the domain //geography//. The domain //lighting//, if it is indeed a domain, would be suitable for 'candle'.

²³ In context with 'storm', 'snow' and 'desert', one could no doubt index 'moon' in the domain //weather//, since it is associated with the tides and the seasons.

²⁴ Especially in context with 'glass', the aqueous nature of snow and storms activates a possible seme: /food/.

²⁵ The domain //ornithology// will be even more appropriate if this is not a "lowly" chicken egg, but due to its elongation, the egg of some other bird.

²⁶ With this semic series, we are introducing a class called "not applicable", and its applicability should be investigated, both here and in other series.

²⁷ Although the storm, like snow, implies the presence of water, the storm itself is not edible.

²⁸ This indexation is valid in French (but not in English) by homonymic rewriting, from '*chapeau melon*' ['melon hat'] (/clothing//) → ['melon'] (/food//).

²⁹ 'Glass' contains an application-oriented seme /for an edible element/, but is not edible itself. In other words, /edible/ is not governed here by the attributive case (ATT), only by the final case (FIN).

³⁰ If we have a heat-producing function, we will indicate only the final seme intended (/hot/ or /warm/), and the same applies for a cooling function.

³¹ Should the moon be seen as a reflective celestial body, with no light or heat of its own, a nocturnal presence in opposition with the sun, and thus associated with cold (especially in context with 'snow')?

³² Should the storm be seen as a cooling climatic event?

³³ The typical desert is hot, but in context with 'snow', the seme /cold/ may have some relevance.

³⁴ The egg is intrinsically neutral, but implies a seme /to be warmed/ (by brooding) or even /to be cooked/.

³⁵ The hat, the shoe and the ceiling are intrinsically neutral (that is, in the attributive), but they imply a seme /for keeping warm/ or /for keeping the cold out/ (or the seme /warm/ in the final).

³⁶ A glass typically contains a cooling liquid. The cooling function – not just the thirst-quenching function – is no doubt made salient in context with the 'desert'.

³⁷ Known as a "forging hammer", this kind of hammer is neutral in itself (that is, in the attributive), but implies a seme /for heated metals/ (or a seme /hot/ in the final case).

³⁸ As an exotic tree, the acacia could be associated with the brightness attributed to a contextual element: the desert.

³⁹ The moon itself appears to be bright, but it shines in darkness.

⁴⁰ Since it is a covering, and opaque, thereby preventing light from coming in (usually from above), the ceiling would relate to darkness.

⁴¹ In our mental images, the storm and its "black" clouds darken the sky by intercepting rays of light from above, like the ceiling, but the storm also produces lightning.

⁴² The hot desert is associated with powerful, excessive brightness.

⁴³ Since it hides its contents inside an opaque shell, the egg may be associated with darkness; it is in opposition with the obliging transparency of the glass, which lets us see whatever it holds.

⁴⁴ By the fact that it affords protection from the sun, the hat could relate to brightness and heat. However, this kind of hat is used for "keeping warm", not for "cooling off".

⁴⁵ Unlike the egg, the glass reveals its contents by its transparency, thus associating it with light.

	signified	Type of seme	Word 1 Acacia	Word 2 Moon	Word 3 Snow	Word 4 Ceiling	Word 5 Storm	Word 6 Desert	Image 1 [egg]	Image 2 [shoe]	Image 3 [hat]	Image 4 [candle]	Image 5 [glass]	Image 6 [hammer]
10	a straight, b curved ⁵³	spe	a? ⁵⁴	b	a? ⁵⁵	a	a? ⁵⁵	a ⁵⁶	b	a b ⁵⁷	b ⁵⁸	a b ⁵⁹	a b ⁶⁰	a b ⁶¹
11	a low, b high ⁶²	spe?	a	b	b	a	b	a ⁶³	a ⁶⁴	a ⁶⁵	a	a	a ⁶⁶	a ⁶⁷
12	a container, b contents	spe?			b? ⁶⁸	a ⁶⁹	b? ⁶⁸	a ⁷⁰	a b ⁷¹	a ⁷²	a ⁷³		a	
13	a solid, b liquid	spe ?	a	a ⁷⁴	a b ⁷⁵	a	b	a ⁷⁴	a b ⁷⁶	a b ⁷⁷	a b ⁷⁷	a b ⁷⁸	a b ⁷⁹	a ⁸⁰
14	a water, b absence of water, c protection from water, d fire ⁸¹	spe		a	a	c	a	b d ⁸⁴	⁸⁵	c	c	d ⁸⁶	b ⁸⁷	d ⁸⁸
15	a damaging, b damageable, c damaged, d not damaging, e undamageable, f protective ⁸⁹	spe	b ?	e	a b	f	a	a	b f	a f	f	a b c	a ? b	a e
16	a familiar, b exotic	spe?	a b ⁹⁰	a	a	a	a	b	a ⁹¹	a	a ⁹²	a	a	a ⁹³

⁴⁶ The hammer is used to pound on heated (and thus bright) metals. The credibility of this interpretation is reinforced in context with the candle, another bright, melting object.

⁴⁷ We are talking about colors that are thematized, colors as signifieds. As far as the images go, the thematized colors are *a priori* independent from the pigmentary colors used to generate the thematic representation. The glass obliges us to distinguish clearly between thematized color and the color of the signifier. The "color" being represented is transparency, whereas the color that is used to render transparency in the signifier is a blend of white, black and gray.

⁴⁸ The color could be "other", in that the yellow acacia flowers are vivid in our mental images.

⁴⁹ The moon is traditionally considered to be white.

⁵⁰ Perhaps we should have gray and black for the storm, in reference to the darkening of the sky and the color of the storm clouds.

⁵¹ The desert's /bright/ feature would seem to evoke brilliant color semes.

⁵² On this particular reproduction, the handle of the hammer is brownish, whereas the head is gray.

⁵³ This relates to semes, of course, and therefore elements of content, or thematized elements.

⁵⁴ We will ascribe straightness to the tree, if not for its general appearance, then certainly for the powerful force impelling it upward.

⁵⁵ We traditionally view precipitation as forming straight, more or less continuous lines, slanted to some degree by the wind (as in Apollinaire's calligrams). Shifting from snow to snowflakes, straight lines predominate: under a microscope, the snowflake is replete with straight lines.

⁵⁶ We generally think of deserts as rather flat expanses, relating them to surfaces dominated by straight lines.

⁵⁷ The front part of the heel is a straight line, but curves seem to predominate overall.

⁵⁸ Curves are clearly predominant, especially since this is a derby hat, and therefore rounded.

⁵⁹ The tapered shape of the candle predisposes it toward straightness, but a few curves are present in the (ovoid) shape of the flame, the cylindrical shape of the candle and the pool of melted wax.

⁶⁰ The longish shape of the glass has an element of straightness, but it appears less straight than the candle, because the shape is less elongated.

⁶¹ Although the predominant shape of the hammer is straight, the cylindrical shape of the head gives it some curvature as well.

⁶² Since high and low are relative, we should give a few more details. There is a large spatial amplitude evoked by the presence of celestial objects (the moon) or at least aerial objects (snow and the storm), along with elements located more or less at ground level (the shoe, the egg, precipitation). To take the example of the hat, it is among the terrestrial objects, and of these, it is lower than the ceiling or the acacia. Being located at the top of the human body, it is higher than the shoe. Moreover, some elements go from high to low or low to high at different speeds and with different amplitudes; in other words, the locative cases are different for the starting point and the destination: this is true of precipitation, the candle (driven upward by the flame and downward by melting), and the acacia (whose destination point is above the hat, since it grows three to six meters high). In this semic series, /high/ and /low/ are considered as synonyms of /celestial/ and /terrestrial/, but we will note other spatial details in passing.

⁶³ The desert is usually thought of as a low-altitude expanse with very little relief.

⁶⁴ The egg is a terrestrial product that comes from a creature of the air, theoretically, but since chickens are not proficient at flying, they are associated with the ground, and in French, with the appropriately named "*basse-cour*" ["low-yard", which is the chicken yard].

⁶⁵ The seme /high/ can be distinguished in 'shoe', since this shoe is "high-heeled", but this particular /high/ would not have the same value as the /high/ in our semic series. However, we should note that there is some upward movement from very low to slightly less low.

⁶⁶ The glass can be linked to upward movement, since one raises it to one's mouth.

⁶⁷ One moves a hammer from high to low to use it. The absence of shadows results in a kinesthetic interpretation of the image, and the head appears in a higher position, ready to come crashing down from gravitational force. This is the downward movement of a hammer in use. However, we should point out that this hammer is shown "upside down", with the crown upward and the peen downward.

⁶⁸ In context with /water/ and 'glass', snow can be seen as a contained element, as can the storm, due to the water that it brings down.

⁶⁹ Since it is part of a house, the ceiling participates in containing of a sort.

⁷⁰ As a spatial substrate, the desert is somewhat like a container, or at least a supporting structure.

⁷¹ The eggshell is a container for what is inside.

⁷² The shoe is used to contain a foot.

⁷³ The hat has a head as its contents, naturally.

⁷⁴ The moon, the desert and the candle are similar in that they are not only solid, but clearly lacking in water (especially the first two).

⁷⁵ Snow evokes the process of converting liquid to solid and vice versa, especially in context with 'candle'.

⁷⁶ The shell and its contents are related to solid and liquid, respectively.

⁷⁷ The shoe and the hat are used for protection from liquids.

⁷⁸ The process of converting solid to liquid is depicted here in the durative phase (that is, in the middle of the action). The modal category of (strong) possibility allows us to anticipate the terminative phase (the end of the action). Note that the object melting ["*fond*"] in this image is labelled "*plafond*" ["ceiling"], that another signified, 'snow', refers directly to melting, and that another one, the forging hammer, indirectly suggests partial melting of metals. The effect of this rather plausible homonymic game is clearly to add salience to the seme /melt/ in 'candle' and in the other signifieds where it is already found. One has to wonder if the wordplay actualizes the same seme in '*plafond*' [ceiling].

⁷⁹ The glass, which is solid, is by definition intended for liquids, and it is produced by going through a melting state, which is no doubt relevant in the context of what is suggested by the forging hammer and the candle, with the candle being a direct illustration of the melting process.

⁸⁰ Although the hammer is solid, the elements being hammered are heated metals, that is, they are in an intermediate state between liquid and solid.

⁸¹ We have added /fire/ to this semic series because of the traditional opposition between this element and water, an opposition which seems to be recaptured in this painting, where water, flame and the desert are dramatically juxtaposed.

Others semes: animal/plant/mineral, aesthetic/utilitarian, durable/fragile, full/empty, dynamic/static, heavy/light, single/compound, precipitation, etc.

Legend:

Basic symbols

"sign"
'signified'
signifier

Semic symbols

/seme/ or /semic repetition/
/a/, /b/, /c/, /d/, /e/... : actualized seme, identified by letter according to its position in a series of semes
mag: macrogeneric seme (indicates that it belongs to a dimension)
meg: mesogeneric seme (indicates that it belongs to a domain)
mig: microgeneric seme (indicates that it belongs to a taxeme)
spe: specific seme (distinguishes a signified from the other signifieds belonging to the same taxeme)

Case symbols (links between semes)

(ACC): accusative, the patient of an action; the entity affected by the action
(ASS): assumptive, point of view
(ATT): attributive, a characteristic
(BEN): benefactive, the entity for whose benefit the action is performed
(COMP): comparative, compared elements
(DAT): dative, the receiver, entity that receives a transmission
(ERG): ergative, the agent of a process or an action
(FIN): final, goal (result or effect sought)
(INST): instrumental, the means used
(MAL): malefactive, the entity to whose disadvantage the action is performed
(LOC): locative, position as represented in time (LOC T) or space (LOC S)
(RES): resultative, result, consequence.

Other symbols

//semantic class// (a group of interdefined signifieds)
→ [interpretive rewriting]
[lexical label]

⁸² The aridity of the moon is emphasized in context with 'desert'. The contexts /water/ and /fertility/ bring out the (proven) function of regulating tides and (supposed) regulation of uterine fluid (which is not exactly water, though).

⁸³ If lightning is involved, then we have fire.

⁸⁴ It is clear that the fire involved here, a hyperbolic image for heat, is not the same kind of fire as in the candle or the lightning.

⁸⁵ Strictly speaking, the seme /liquid/ is more applicable to the contents of the egg than the seme /water/.

⁸⁶ The candle generates a liquid substance, but it is not water, strictly speaking.

⁸⁷ The absence of water depicted in the glass is made salient by the label, "storm", which contains an overabundance of water.

⁸⁸ Again, note that this is a hammer used for forging.

⁸⁹ These semes must be seen as illustrating the interplay between modal variations (possible, impossible, real) and semantic cases (ergative, accusative). The search for these particular semes is motivated by the conspicuous presence of groups of terms that entertain destructive relations: 'snow'/candle' and 'desert', 'hammer'/egg' and 'glass'. Because of the childlike quality of the painting, with its A-B-C classroom style, it is tempting to view the collection of elements in this painting as a sort of "rock-scissors-paper" game. If there is a game, it is not as systematized as "rock-scissors-paper" (there is not just one destroying and destroyed element for each element of the combinatorial game). Some of the possible combinations are as follows: The glass can be broken by the hammer or even the shoe. The eggshell can be smashed by the shoe, the hammer or the glass. The desert (and less realistically, the moon) is fairly harmful to the egg. The fire and the candle (and less realistically, the desert) can damage the snow. The candle can be extinguished by precipitation and wind (or even by the glass, turned over). The candle damages itself by consuming itself. Over and above its aesthetic (or even seductive) function, the purpose of the shoe is to cover and protect the foot. The acacia is subject to the violence of the storm and the destructive force of the desert. The hat protects one from precipitation and cold (the word "snow" is used for its label), but it also protects from the sun, especially in context with 'desert' and, by opposition, with 'moon'. The eggshell protects the embryo. "Damage" is meant as a transformation deemed to be negative, which does not appear to be the case with the abstract forging of metal suggested by the sledge hammer. The moon plays the role of the most un-damageable element, along with the hammer, to a lesser degree; it is in opposition with the egg, snow and the glass, which are clearly the most fragile elements.

⁹⁰ The acacia is both familiar and exotic: it produces a well-known flower and it comes from "Arabia" (which is where we get the name "Arabia gum" for the gum it produces). In this respect, it is connected with the desert, possibly serving to locate it.

⁹¹ By itself, an egg is familiar, especially if it is a chicken egg.

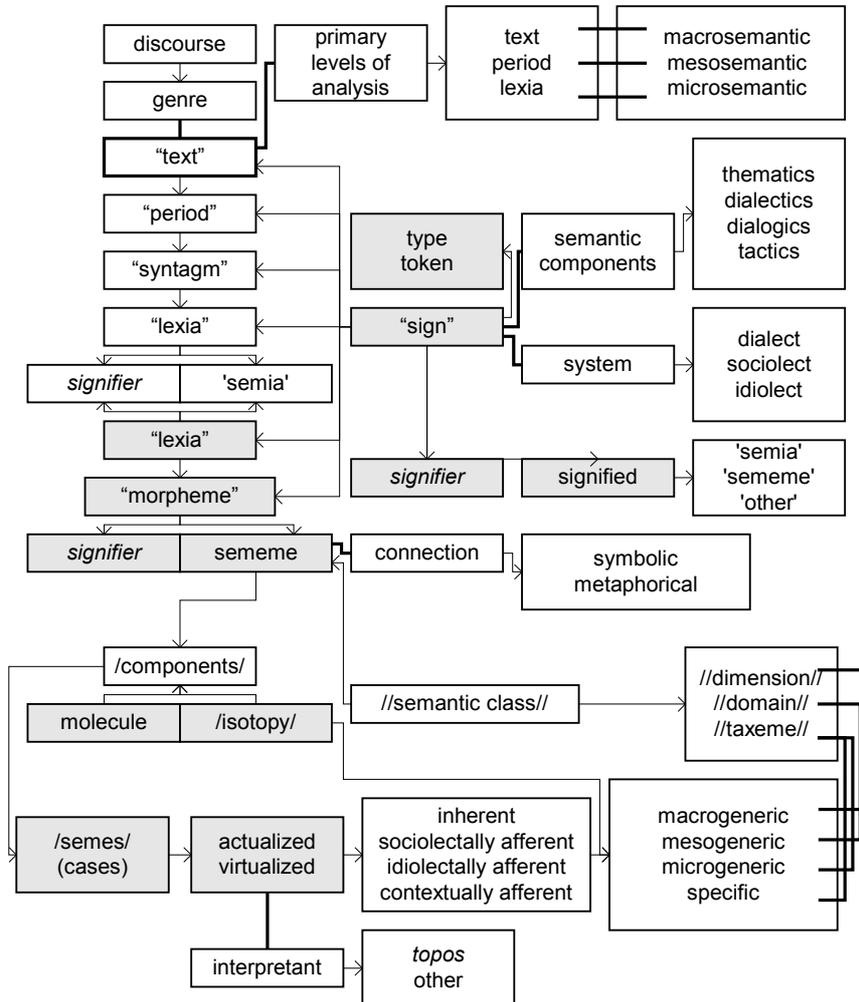
⁹² It was much more common for men to wear hats during the era when the painting was produced than it is now; the hat is not a particularly unusual accessory. However, we should check on the status of the derby hat in European men's headwear during that period.

⁹³ This hammer is in fact more specialized than a household hammer; it is a "forging hammer".

3. SUMMARY DIAGRAMS

3.1 SUMMARY DIAGRAM I

Summary diagram of interpretive semantics

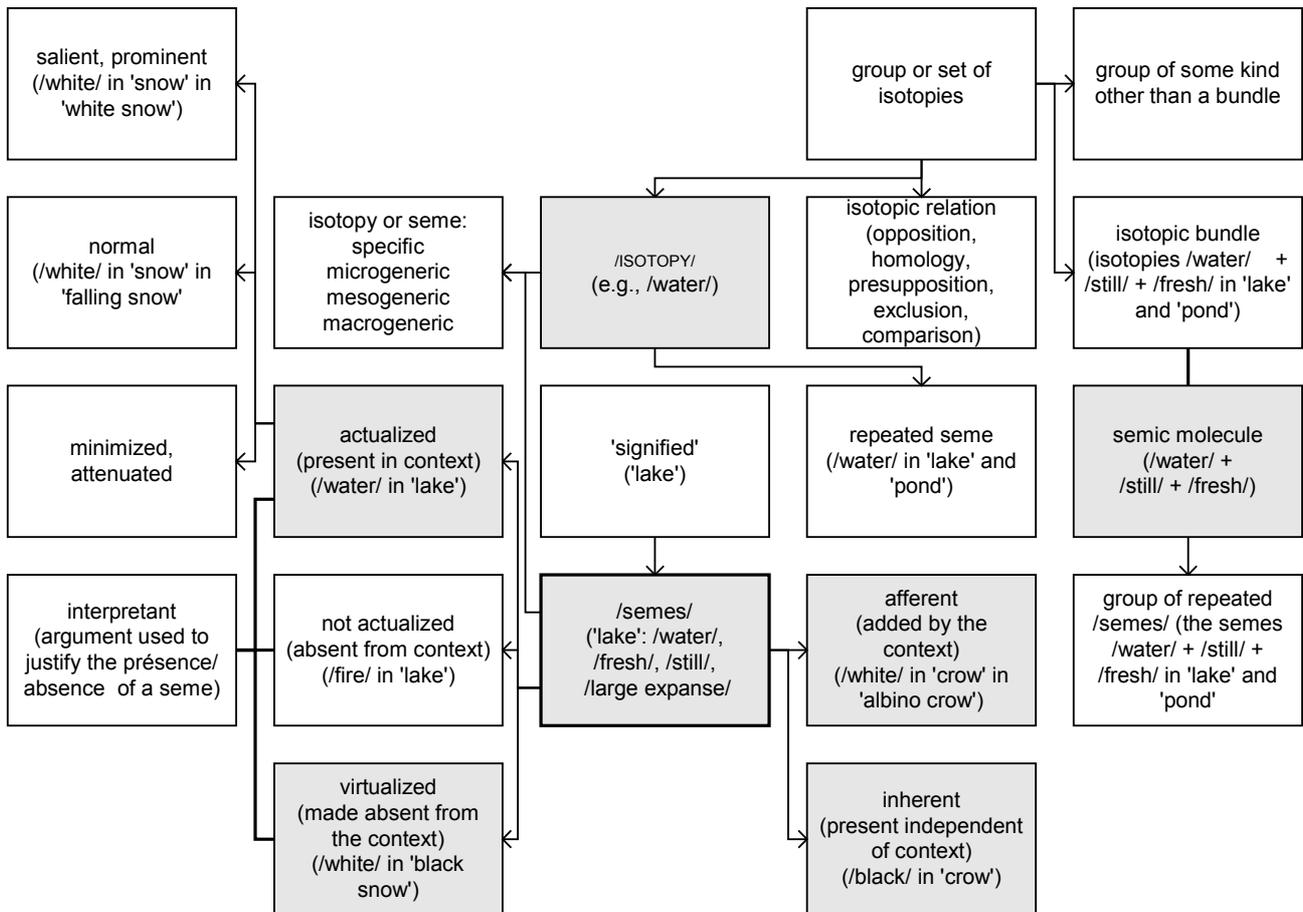


LEGEND

1. Vertical arrows: components (for ex., a lexia can be broken down into a signifier and a semia, but also into morphemes)
2. Horizontal arrows: classifications (for ex., a seme is either actualized or virtualized, and either inherent or afferent, etc.)
3. Bold-face line with no arrow: other relation

3.2 SUMMARY DIAGRAM II

Diagram summarizing semic analysis



LEGEND

1. Vertical arrows : components (for ex., an isotopy is broken down into semes)
2. Horizontal arrows : classification (for ex., a seme is classified as actualized, non-actualized or virtualized; it is also classified as specific, microgeneric, mesogeneric or macrogeneric)
3. Boldface link with no arrow: other relationship