LIRICS

Deliverable D4.3

Documented compilation of semantic data categories

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1   Introduction

At a time when semantic content annotation is proving to be at the cutting edge of rapid and accurate information extraction of all varieties, there is some urgency in setting standards for reusability and interoperability of resources for wide application and distribution. The LIRICS project has as one of its aims to propose a common and well-defined set of descriptors for semantic annotation in the form of data categories in an on-line registry, in accordance with ISO standard 12620 (Terminology and other language resources – Data categories for electronic lexical resources; see Romary 2004).

The work in this part of the LIRICS project is performed in Work Package 4 in close collaboration with two related initiatives. First, the area of semantic content annotation has been recognized as important by the International Organization for Standardization (ISO), which has formed the Task Domain Group TDG 3, Semantic Content, as an international expert group devoted to work in this area, within Technical Committee 37, Subcommittee 4 (Terminology and Language Resources Management). In addition, an independent scientific peer group was formed within the ACL Special Interest Group on Computational Semantics (ACL/SIGSEM), the Working Group on the Representation of Multimodal Semantic Information (MMSemR). The work in WP 4 of the LIRICS project is carried out in close collaboration with this Working Group and with ISO TC 37/SC 4/TDG 3, as witnessed by joint workshops that took place in January 2005 in Tilburg (The Netherlands), in April 2006 in Marina del Rey (California), and in January 2007 in Tilburg (The Netherlands). (See also http://let.uvt.nl/research/ti/iso-tdg3 and http://let.uvt.nl/research/ti/sigsem/wg.)

Following on from the discussion of methodological factors in the approach to isolating semantic descriptors for representation as outlined in the LIRICS deliverable D4.1 (Bunt and Schiffrin, 2006), this document will deal with:

(*Section 2*) Issues in identifying commonalities in alternative approaches to the annotation and representation of various types of semantic information, and how these issues may be addressed.

(*Section 3*) A proposal for a set of data categories in each of the four areas of consideration for semantic annotation; namely: temporal, dialogue act, reference and semantic role annotation.

(*Section 4*) Concluding remarks on the status of the proposed data categories, their application in the constructing of multilingual test suites (described in LIRICS Deliverable D4.4), and the role of these data categories in the fields of computational linguistics and language engineering.

This current deliverable constitutes a report on the state of play at the 30-month stage of the project..

2   Issues in semantic descriptor selection

As discussed in D4.1, the LIRICS project does not aim at contributing to the development of a standard *format* for the annotation and representation of semantic content, but at providing well-defined *descriptive concepts*. In particular, the aim is to build an on-line registry of definitions of such concepts, called '*data categories*'. These semantic data categories are abstract concepts, whose use is not restricted to any particular format or representation language.

However, for each semantic area of consideration, there are any number of different annotation schemes which come from different theoretical frameworks and are used on a variety of different types of data for extracting different information. The problem is which of these concepts should be included, and which should not, and for what reason.

In previous documents, we have advocated the use of metamodels to try to abstract away from the details of specific schemes in order to approach the key common concepts within each semantic area of concern. The use of metamodels works particularly well in the clarification of highly structured related concepts, such as those representing temporal information for example, or indeed the complex relationships between morpho-syntactic concepts. It works less well for the comparison of schemes whose concepts are more linearly organised, whose concepts are in essence category labels and whose interrelations are less complex and structurally interdependent, for example reference relations.

It is for this reason that one cannot simply rely on the abstracted metamodel for finding the common concepts between differing schemes for all kinds of semantic information, one must also make close comparison between the individual concepts that may populate the categories in alternative models. Assuming that some general consensus does in fact exist between schemes purporting to annotate the same type of semantic information, our aim has been to pick exactly those concepts for which evidence of some broader consensus can be found (with some notable exceptions included here in order to stimulate discussion within the research community).

The difficulties of producing a list of common core data categories for semantic annotation do not end with choosing the concepts that should be included. Precise definitions for such data categories are extremely difficult to come by. Definitions in different schemes will differ because different schemes will follow different frameworks. The issue can be further complicated by finding that the definitions even for a specific scheme are often imprecise or unclear, or that definitions for the same concept overlap with similar concepts even within the same scheme (which is often also a cause of poor inter-annotator agreement scores). A surprising number of definitions for core concepts are rather vague and rely on a 'common sense' interpretation by a user and are not rigorous or comprehensive as a result.

If we take the definition from one particular scheme, we may exclude some instances of the concept that are covered in another scheme by making it too specific; but if we broaden the definition to encompass all possible schemes, we risk the concept becoming so vague that it will encroach on instances that should be more properly covered by other concepts.

With this dilemma in mind, we have taken the approach of developing a set of data categories that are as far as possible independent from individual projects or schemes. The data categories are in this way intended to be abstract, yet also clearly related to a wide range of slightly different concepts. The idea is that one could then define the more specific, scheme-dependent concept with reference to the generic concept, or as a kind of sub-category, if one so desired.

Finally, once the concept and the definition are fixed, there is also the more minor, but equally elusive choice of terminology and labelling. This problem, while seemingly trivial in comparison to the other two, may be more important for the acceptance of the proposed semantic data categories than anything else. This is because the choice of category label may advertently or inadvertently signal a bias towards one particular theoretical background, which could then cause the alienation of certain research groups rather than the looked for consensus and acceptance.

So, to recap, for the inclusion of every data category there are three important types of issues to be solved: (1) which concepts should be chosen, (2) which definition should go with each concept, and (3) which term should be used to refer to this concept and definition. For the purposes of being able to justify the inclusion of any particular concept into the semantic data category registry, we define the following selection criteria for any candidate data category added:

(1) **Concept**: Concepts that are common to more than one approach should be given priority for inclusion. This criterion is best practice in general, although some exceptions to the rule have also been allowed for the sake of flexibility and where there were compelling reasons for doing so.

(2) **Definition**: Because accurate definitions are hard to find, the definitions that already exist in the literature should not be taken for granted, but should be adapted to make them more precise and less controversial where appropriate. Definitions should be as concise as possible without losing intelligibility, and should distinguish the concept clearly and uniquely from other related concepts by some feature or property.

(3) **Term**: The most common term for the concept should be selected, or a compromise should be found. Explanations should be added where appropriate.

Having spent some time discussing the obstacles and issues for putting forward a concrete set of semantic descriptors as potential candidates for standards, in the following section we present a proposal for such a set. This set of data categories has been endorsed by the ISO TC 37/SC 4 Thematic Domain Group3, Semantic Content. We expect this set of data categories to play a part in continuing ISO initiatives that aim at the development of international standards for language resources annotation.

3 Semantic descriptors

In the following discussions of each area of semantic annotation, we present data categories following ISO standard 12620, but leaving out certain elements that are either not of interest here (i.e. its creation date), or else is implicit (i.e. the so-called profile in the Data Category Registry, which will always be 'Semantics').

3.1 Temporal entities and relations

/eventuality/	
Conceptual Domain	/event/ /state/
Definition	Something that can be said to obtain or hold true, to happen or to occur.
-- Source	Adapted from: Pustejovsky et al. (2004).
Explanation	This is a very broad notion of what Pustejovsky calls an 'event', but is more generally known in the literature as 'eventuality', which includes all kinds of actions, states, processes, etc. It includes (but is not to be confused with) the narrower notion of event as something that only happens at a certain point in time (such as a clock striking 2 o'clock, or waking up), or during a short period of time (such as laughing).
-- Source	Harry Bunt
Example	one raindrop making a ripple on a pond, a rugby match

/event/	
Conceptual Domain	/punctualEvent/ /extendedEvent/
Definition	Something that occurs.
-- Source	Adapted from: Weiner and Simpson (1996) and Pustejovsky et al. (2004).
-- Note	This event in the narrower sense, and is called an "occurrence" in TimeML (Pustejovsky et al. (2004)).
Explanation	An event is anything that happens or can happen, either significant or insignificant. An event begins to occur at a point in time, which can be distinguished because the state of the world changes; something is different before and after the event.
-- Source	Adapted from: Wikipedia
Example	one raindrop making a ripple on a pond, a rugby match

/state/	
Definition	Stable situation in which none of the properties of the participants are subject to change.
-- Source	Adapted from: Sanfilippo and et al. (1999)
Explanation	In contrast to an event, a state does not contain any active process (such as walking, hitting etc.). It is important to be able to distinguish states from events for the assignment of semantic roles. While there is a considerable intersection between the sets of roles for states and for events, there are also unique differences. For example, due to their very nature, states cannot have an agent (there is no doer as there is nothing done); but they may have an experiencer (an undergoer or a feeler of the state).
Example	State verbs include transitive verbs such as 'have', 'love', 'believe' (verbs of mental states and perception) and intransitive verbs such as 'stand' and 'sit' (in the sense 'be situated') when these are read statively, e.g. 'The statue stood in the corner'. Normally, states refer and relate to other participants (somebody placed the statue in the corner and removed it afterwards), but no interaction between participants in the state itself is involved. State verbs are also subclassified into two classes comprising locational and non-locational verbs. Among the non-locational verbs, the following subclasses are distinguished: state or condition (e.g. 'be broken', 'be dormant'), perception (e.g. 'see'), cognition (e.g. 'know'), possession (e.g. 'have') and equational (e.g. 'x is like y') (Sanfilippo and et al., 1999).

/punctualEvent/	
Broader Concept	/event/
Definition	Event that is regarded as lasting for an infinitesimally small period of time.
-- Source	Adapted from: Pustejovsky et al. (2004).
Explanation	Punctual events can be specified as points in space-time that are defined by their time and place.
Example	passing out, the blink of an eye

/extendedEvent/	
Broader Concept	/event/
Definition	Event that lasts for an extended period of time.
-- Source	Adapted from: Pustejovsky et al. (2004).
Explanation	An extended event is not defined as a point in space-time but as something that takes place during a stretch of time at a certain place.
Example	Writing a paper; a concert, a flight from Amsterdam to Birmingham

/instant/	
Definition	Point in time.
-- Source	Adapted from: WordNet
Explanation	Time is often viewed as a straight line from minus infinity to plus infinity. According to this view, time is formed by an infinite sequence of points. An instant can also be seen as an infinitesimally small interval.
Example	"The moment he arrived the party began"

/temporalInterval/	
Definition	Uninterrupted stretch of time.
-- Source	Adapted from: WordNet.
Explanation	Time is often viewed as a straight line from minus infinity to plus infinity. A temporal interval is a part of that line without any gaps, containing all the points between its beginning and its end. In mathematics, an important issue is whether an interval includes its beginning and its end (is 'closed') or not (is 'open' or 'half-open'). In natural language descriptions of intervals this may also be relevant, as when describing and interval in terms of a number of days, but not with the same granularity as in mathematics.
Example	"He read a book from 12:00 until 14:00"

/beginning/	
Broader Concept	/instant/
Definition	Instant at which a temporal interval begins.
-- Source	Adapted from: Hobbs and Pan (2004).
Explanation	In order to define the length of the stretch of time of an interval one needs to define its beginning.
Example	"John started to run at 7 o'clock this morning"

/end/	
Broader Concept	/instant/
Definition	Instant at which an interval ends.
-- Source	Adapted from: Hobbs and Pan (2004).
Explanation	In order to define the length of the stretch of time of an interval one needs to define its ending.
Example	"John stopped running at half past nine"

/temporalUnit/	
Definition	Element in a system to measure the length of a temporal interval or a set of temporal intervals.
-- Source	Adapted from: Bunt (1985).
Explanation	In measurement systems, various units are defined for different purposes. Small units such as seconds and minutes are defined to measure small temporal intervals; as one may want to avoid working with big numbers, for larger temporal intervals, units such as week, year and century are defined.
Example	minute, hour, week

/duration/	
Definition	Length of a temporal interval.
-- Source	Adapted from: Bunt (1985).
Explanation	A duration is an amount of time that can be expressed in terms of a number of temporal units, such as half and hour or 30 minutes. The duration of a temporal interval is given by a real number $\times$ a temporal unit. The duration of an interval that has no definite begin and/or end point is infinite.
Example	1 hour, 60 minutes

/timeSpan/	
Definition	Stretch of time consisting of one or more intervals that are not necessarily contiguous.
-- Source	Adapted from Hobbs and Pan (2004).
Explanation	When an event is discontinuous or repeated a definite number of times or during a definite period of time one can not only derive its duration (or the duration of its instances) but also the timespan during which the event occurs.
Example	The timespan of "Arthur read a book between 12:00 and 13:00 and between 15:00 and 16:00" is 12:00 - 16:00, which is a timespan of 4 hours (as opposed to the duration which is 2 hours).

/pointOfSpeech/	
Definition	Instant at which a given utterance occurs.
-- Source	Adapted from: Reichenbach (1947).
-- Note	For a document as a whole, this may be considered to be the same as the document creation time.
Explanation	In order to interpret tense, one needs to define anchor points in time of which pointOfSpeech is one.
Example	"Arthur smiled", the pointOfSpeech is the time that the utterance is made.

/pointOfEvent/	
Definition	Instant at which, or interval during which, the event mentioned in a given utterance occurs.
-- Source	Adapted from: Reichenbach (1947).
Explanation	As well as a 'point of speech', a 'point of event' also needs to be defined in order to interpret tense.
Example	"Arthur smiled" the temporal location of pointOfEvent can be defined as being prior to pointOfSpeech.

/pointOfReference/	
Definition	Instant of temporal perspective on the event in a given utterance.
-- Source	Adapted from Reichenbach (1947).
Explanation	To locate certain tenses in time a third anchor point is also required, defined as the point of reference.
Example	"Arthur will have gone by then", where the pointOfSpeech is now, the pointOfEvent is some time before 'then' and the pointOfReference is 'then'.

/pointOfText/	
Definition	Instant at which reported speech is anchored.
-- Source	Harry Bunt and Amanda Schiffrin
Explanation	It is the point of time considered in the text of the speech. So for example, when a person is telling a story, it is not enough to know the point of the speech itself (the document creation time), but the point at which the speech in the story is taking place. Knowing pointOfText is necessary for the temporal placing of any reported speech
Example	"Last Friday the Home Secretary said he would be taking the matter further". In this example, the pointOfSpeech is the time at which this sentence is uttered or written (needed to anchor the phrase 'last Friday'), the pointOfText and the pointOfReference is 'last Friday', and the pointOfEvent is at some time in the future from the pointOfReference.

/timeZone/	
Definition	Time zones are areas of the Earth that have adopted the same standard time, usually referred to as the local time. Most time zones are exactly one hour apart, and by convention compute their local time as an offset from Greenwich Mean Time.
-- Source	Adapted from: Wikipedia.
--Note	There has already been extensive work carried out on the consistent representation of date and time (including time zone information) within ISO: see ISO 8601.
Example	Greenwich Mean Time (GMT), Central European Time (CET)

/temporalOrderingRelation/	
Definition	Relation that determines how objects are ordered in time.
-- Source	Adapted from: WordNet.
Explanation	There is a limited number of ways to order objects, which are collectively called ordering relations.
Example	precedence, simultaneity

/tense/	
Definition	Way in which languages express the time when an event described by a sentence occurs; this is commonly a property of a verb form.
-- Source	Adapted from: Wikipedia.
Explanation	Language possesses various mechanisms that enable us to locate events in time of which tense is one.
Example	past, present, future

/ptLink/	
Definition	Temporal relation between punctual events and instants, anchoring punctual events in time.
-- Source	A reworking of TimeML's TLINK and ALINK (Pustejovsky et al. (2004)).
Explanation	The basic temporal relation between punctual events and instants is 'atTime', however, this relation can be negated or modified by for instance 'approximately'.
Example	"Mary finished her thesis [at some point] on Tuesday" "Mary did not finish her thesis on Tuesday"

/etLink/	
Definition	Temporal relation between extended events and intervals, anchoring extended events in time.
-- Source	A reworking of TimeML's TLINK and ALINK (Pustejovsky et al. (2004)).
Explanation	The basic temporal relation between extended events and instants is 'during', however, this relation can be negated or modified by for instance 'more than'.
Example	"Sara danced for an hour" "Sara danced for more than an hour"

/sLink/	
Definition	Subordinating relation between two events or between an event and a temporal relation.
-- Source	Adapted from: Pustejovsky et al. (2004).
Explanation	Some ordering relations cannot always be expressed by an ordering relation between two events, either because some linguistic signal complicates the ordering or there is an ordering relation between the linguistic signal and an event.
-- Source	Adapted from: Pustejovsky et al. (2004).
Example	"John entered the room and switched on the light"

3.2   Reference annotation

Coreference relation

/coreference/	
Definition	Equivalence relation between linguistic expressions referring to the same extra-linguistic entity.
-- Source	van Deemter K., Kibble R. (2000). On Coreferring: Coreference in MUC and related annotation schemes. *Computational Linguistics* 26(4).
Example	*French boss Aimé Jacquet* praised *his* team's application.
-- Source	Davies S., Poesio M. (2000). Coreference. MATE Dialogue Annotation Guidelines-Deliverable D2.1, January 2000, 126-182.

Linguistic referential relations

These data categories define relations between lexical items or nominal phrases. For reference annotation, the relations which are defined between lexical items may be extended to larger linguistic units, such as noun phrases.

/linguisticReferentialRelation/	
Conceptual Domain	/synonymy/ /hyponymy/ /compatibility/ /acronymy/ /meronymy/ /metonymy/
Definition	Pattern of association between linguistic units X and Y in a language, established on truth-conditional relations between parallel sentences in which X and Y occupy identical structural positions
-- Source	Adapted from: http://www.sil.org/linguistics/GlossaryOfLinguisticTerms/WhatIsALexicalRelation.htm D.A. Cruse (1986). Lexical Semantics. Cambridge University Press, UK.
-- Note	In case of reference annotation, lexical relations may be annotated between the heads and modifiers of noun phrases.

/synonymy/	
Definition	Relation between two lexical units X and Y which are syntactically identical and have the property that any declarative sentence S containing X has equivalent truth conditions to another sentence S' which is identical to S, except that X is replaced by Y
Explanation	Synonymy is the linguistic parallel of the *identity* relation between classes. Synonyms differ in peripheral traits, related for example to stylistic, dialectal or diachronic variation.
-- Source	Adapted from: D.A. Cruse (1986). Lexical Semantics. Cambridge University Press, UK.
Example	{Hund, Köter}, {flashlight, torch}, {glad, joyful, happy}, {violin, fiddle} He plays the *violin* very well. He plays the *fiddle* very well.

/hyponymy/	
Definition	Relation between lexical units X and Y characterised by the property that the sentence *This is a(n) X* entails, but is not entailed by the sentence *This is a(n)* Y.
-- Source	Adapted from: D.A. Cruse (1986). Lexical Semantics. Cambridge University Press, UK.
-- Note	Hyponymy and its converse hyperonymy are the linguistic parallels of the relation of inclusion between two classes.
Example	*dog/animal, scarlet/red, to murder/to kill* This is a *dog* => This is an *animal*. This is a *scarlet* flower => This is a *red* flower*.

/hyperonymy/	
Definition	Relation between lexical units X and Y characterised by the property that the sentence *This is a(n) Y* entails, but is not entailed by the sentence *This is a(n)* X.
-- Source	Adapted from: D.A. Cruse (1986). Lexical Semantics. Cambridge University Press, UK.
-- Note	Hyperonymy is the converse of hyponymy.

/acronymy/	
Definition	Relation between two linguistic expressions X and Y where X is a multi-word expression and Y is a string of letters taken from the (initial) letters of the words compopsing X, naming the same thing as X.
-- Source	Adapted from: http://www.soenglish.com.cn/lang/glossary/ ("Acronymy is the formation of new words by joining the initial letters of phrases').
-- Note	Acronomy covers both the use of acronyms and that of abbreviations.
Example	LIRICS: Linguistic InfRastructure for Interoperable Concepts and Systems. Weapons of Mass Destruction (WMD). i.e*., id est*

/compatibility/	
Definition	Relation between two lexical items X and Y that have a common hypernym, and where sentences of the form *A is a(n) (X)* are logically independent of sentences of the form *A is a(n) Y.*
-- Source	Adapted from: D.A. Cruse (1986). Lexical Semantics. Cambridge University Press, UK.
-- Note	Compatibility is the linguistic parallel of the overlap relation between classes.
Example	*{rabbit, pet}, {husband, policeman}*

/meronymy/	
Definition	Relation between two lexical units X and Y where sentences of the form *An X is part of a Y* are normally true when the noun phrases *an X, a Y* are interpreted as generic terms.
-- Source	Adapted from: D.A. Cruse (1986). Lexical Semantics. Cambridge University Press, UK.
-- Note	The definition characterizes only the central variety of meronymy. For more insight see Cruse (1986).
Example	*A finger* is a part of *a hand*. *A wheel* is a part of *a car*.

/metonymy/	
Definition	Relation between two linguistic expressions X any Y, where Y is the name of something and X is the name of something else closely related with it, and X is used to refer to what is named by Y.
-- Source	Adapted from the Oxford University Press Literary Dictionary.
-- Note	Metonymy is not a lexical semantical relation, but is productive phenomenon at the of NPs (see last example).
Example	'Everybody likes *Mozart'* in the sense: 'Everybody likes *Mozart's music'.* *'The White House* announced a new arms control proposal yesterday', where *'The White House' stands for the American government* *'The bacon-and-egg sandwich* is asking for the bill', where *'The bacon-and-egg sandwich'* stands for *'The person who ordered a bacon-and-egg sandwich'.*

Objectal referential relations

These relations form a generalisation of Van Deemter and Kibble's (2000) extensional approach to the definition of coreference in terms of relations holding between referents of linguistic expressions: an objectal relation holds between extra-linguistic entities, defines relations from a referential viewpoint. They might be further specified as objectal identity, part-of and subset relations.

/objectalRelation/	
Conceptual Domain	/objectalIdentity/ /partOf/ /subset/
Definition	Relation between two linguistic expressions when their respective referents are identical, disjoint, overlapping, or one including the other.
-- Source	Adapted from: D.A. Cruse (1986). Lexical Semantics. Cambridge University Press, UK. K. van Deemter, Kibble R. (2000). On Coreferring: Coreference in MUC and related annotation schemes. *Computational Linguistics* 26(4).

/objectalIdentity/	
Definition	Relation between linguistic expressions that have identical referents.
-- Source	Adapted from: K. van Deemter, Kibble R. (2000) On Coreferring: Coreference in MUC and related annotation schemes. *Computational Linguistics* 26(4). Davies S., Poesio M. (2000). Coreference. MATE Dialogue Annotation Guidelines-Deliverable D2.1, January 2000, 126-182.
Example	*French boss Aimé Jacquet* praised *his* team's application. *Le chien* s'est fait écraser. *Il* n'avait pas regardé avant de traverser la route.

/partOf/	
Definition	Relation between two linguistic expressions X and Y where the referent of X is considered as a part of the referent of Y.
Explanation	The partOf relation is used where one expression denotes a physical part of another expression. Davies S., Poesio M. (2000). Coreference. MATE Dialogue Annotation Guidelines-Deliverable D2.1, January 2000, 126-182.
-- Source	Adapted from: Winston, Chaffin & Herrmann. A Taxonomy of Part-Whole Relations. Cognitive Science, 11:417-444, 1987.
-- Note	The lexical counterpart of the objectal relation /partOf/ is /meronymy/.
Example	*The seat* of *the chair* broke when I stood on it to open the window. *The glass of wine I had with you* was the best of all *the wine I had today*.

/subsetOf/	
Definition	Relation between two linguistic expressions X and Y where the referent of Y is considered as a set and the referent of X as a subset of the referent of Y.
Explanation	This relation can be used when one expression denotes a subset of the set denoted by the other expression.
-- Source	Adapted from: Davies S., Poesio M. (2000). Coreference. MATE Dialogue Annotation Guidelines-Deliverable D2.1, January 2000, 126-182.
Example	F: Alors donc / vous avez / ici / *les modèles de fusées* / M: Oui F: Et vous allez essayer de vous mettre d'accord sur un classement / hein classer *les fusées qui ont bien volé* ou *qui ont moins bien volé* /

/memberOf /	
Definition	Relation bewteen two linguistic expressions X and Y where the referent of Y is considered as a set and the referent of X as a meber of that set.
-- Source	Analogous to /subset/
Example	*The generals* met with the Minister of Defense. *One of them* described the meeting afterwards as 'unusual'.

Properties of referents

These data categories concern properties of the extra-linguistic entities involved in the interpretation of referring expressions. These properties are marked grammatically in some languages, for example for animacy and alienability.

/abstractness/	
Conceptual Domain	/abstract/ /concrete/
Definition	Attribute of a semantic entity stating whether or not it is considered as a physical object or consisting of matter.
-- Source	Adapted from: http://www.thefreedictionary.com/abstractness http://www.sil.org/linguistics/GlossaryOfLinguisticTerms/WhatIsAnAbstractNoun.htm

/abstract/	
Definition	Property of a semantic entity, stating that it is considered as a physical object or consisting of matter.
-- Source	Adapted from: http://www.sil.org/linguistics/GlossaryOfLinguisticTerms/WhatIsAnAbstractNoun.htm
Example	chance, freedom

/concrete/	
Definition	Property of a semantic entity, stating that it is considered as a physical object or consisting of matter.
-- Source	Adapted from: http://www.sil.org/linguistics/GlossaryOfLinguisticTerms/WhatIsAnAbstractNoun.htm
Example	farmer, bread, water

/animacy/	
Conceptual Domain	/animate/ /inanimate/
Definition	Attribute of a semantic entity stating whether it is considered as human or animal.
-- Source	Adapted from: http://www.sil.org/linguistics/GlossaryOfLinguisticTerms/WhatIsAnAnimateClass.htm
-- Note	For more information see: Zaenen, Annie, Jean Carletta, Gregory Garretson, Joan Bresnan, Andrew Koontz-Garboden, Tatiana Nikitina, M. Catherine O'Connor, & Tom Wasow. 2004. Animacy encoding in English: Why and how. In ACL Workshop on Discourse Annotation, edited by D. Byron & B. Webber, Barcelona.

/animate/	
Definition	Property of a semantic entity, stating that it is considered as human or animal.
-- Source	Adapted from: http://www.sil.org/linguistics/GlossaryOfLinguisticTerms/WhatIsAnAnimateClass.htm
-- Note	Depending on the annotation goals, /animate/ entities might be sub-classified, cf. for example: Zaenen, Annie, Jean Carletta, Gregory Garretson, Joan Bresnan, Andrew Koontz-Garboden, Tatiana Nikitina, M. Catherine O'Connor, & Tom Wasow. 2004. Animacy encoding in English: Why and how. In ACL Workshop on Discourse Annotation, ed.\ited by D. Byron & B. Webber, Barcelona.
Example	farmer, dog

/inanimate/	
Definition	Property of a semantic entity, stating that it is considered as inanimate, e.g. as an artefact
-- Source	Adapted from: http://www.sil.org/linguistics/GlossaryOfLinguisticTerms/WhatIsAnAnimateClass.htm
-- Note	Depending on the annotation goals, /inanimate/ entities might be sub-classified, cf. for example: Zaenen, Annie, Jean Carletta, Gregory Garretson, Joan Bresnan, Andrew Koontz-Garboden, Tatiana Nikitina, M. Catherine O'Connor, & Tom Wasow. 2004. Animacy encoding in English: Why and how. In ACL Workshop on Discourse Annotation, edited by D. Byron & B. Webber, Barcelona.
Example	bread, water

/alienability/	
Conceptual Domain	/alienable/ /inalienable/
Definition	Attribute of a semantic entity stating whether it is viewed as permanently or necessarily possessed.
-- Source	Adapted from: http://www.sil.org/linguistics/GlossaryOfLinguisticTerms/WhatIsAnAlienableNoun.htm
Explanation	In a language that has distinguishing possessive forms (eg. Baule, Wiyot, Awa, Meyah …) for inalienable nouns, inalienable semantic entities are obligatorily expressed as possessed.

/alienable/	
Definition	Property of a semantic entity stating that it is viewed as not permanently or necessarily possessed.
-- Source	Adapted from: http://www.sil.org/linguistics/GlossaryOfLinguisticTerms/WhatIsAnAlienableNoun.htm
Example	hat, car, table

/inalienable/	
Definition	Property of a semantic entity stating that it is viewed as permanently or necessarily possessed.
-- Source	Adapted from: http://www.sil.org/linguistics/GlossaryOfLinguisticTerms/WhatIsAnAlienableNoun.htm
Example	eye, arm, mother, tongue, name

/entityCategorization/	
Definition	Categorization of a semantic entity with respect to a given classification.
-- Source	Adapted from: Chinchor, Brown, Ferro (1999). Named Entity Recognition Task Definition.
-- Note	The given classification might be a semantic hierarchy (such as WordNet) or an ontological hierarchy.

/naturalGender/	
Conceptual Domain	/male/ /female/
Definition	Natural characteristic of a being, object, or concept, as opposed to the grammatical classification of the noun which designates it.
-- Source	Adapted from: Wikipedia.
-- Note	The natural gender of a semantic entity might be different from its grammatical gender. Cf. French "le ministre" referring to a woman.

/cardinality/	
Conceptual Domain	A positive integer
Definition	Property of a collecttion, specifying the number of its elements.
Explanation	Cardinality may be considered as the semantic, i.e. referential counterpart of grammatical number. There is no 1:1 correspondence between grammatical number and cardinality. Cardinality might be used to overspecify a grammatical "plural" value (*the policemen*), or to indicate the cardinality of a group denoted by a grammatically singular collective noun (*the police*).

Properties of the relation of reference

These data categories concern properties of the relation of reference, i.e. the relation between a referring expression and its referent, in particular when this relation is quantified. This happens when a predicate is applied to a collection C of entities or to an entity E with a part-whole structure, where the predicate may apply to the collection C or the entity E as a whole, or to individual elements of C, or to subcollections of C, or to parts of E.

/collectiveness/	
Conceptual Domain	/collective/ /nonCollective/
Definition	Attribute of a quantified relation of reference, expressing whether a collection of referents is viewed as a single entity.
-- Source	Adapted from H Bunt (1985), Mass terms and model-theoretic semantics, Cambridge University Press.

/collective/	
Definition	Property of a quantified relation of reference, expressing that a collection of referents is referred to as a single entity.
-- Source	Adapted by Harry Bunt from H. Bunt, Mass terms and model-theoretic semantics, Cambridge University Press 1985.
Example	*The two men* lifted the piano*; John lifted *the boxes*.

/nonCollective/	
Definition	Property of a quantified relation of reference, expressing that a collection of referents is not viewed as one single larger entity (e.g. as a group of individuals).
-- Source	Adapted from http://www.chompchomp.com/terms/collectivenoun.htm H. Bunt (1985), Mass terms and model-theoretic semantics, Cambridge University Press.
Example	The two men were laughing.

/countability/	
Conceptual Domain	/countable/ /noncountable/
Definition	Attribute of the relation of reference for nouns and nominal groups, expressing whether the target domain is viewed as made up of well-defined individual instances, as opposed to being viewed as a homogeneous mass or substance.
-- Source	Adapted from: H. Bunt (2006) "Mass Expressions", in Encyclopedia of Language and Linguistics, 2nd Edition, Keith Brown, editor. Amsterdam: Elsevier, 5757-5760.
-- Note	It is common parlour to distinguish 'count nouns', like *table* and *book*, and 'mass nouns' like *water, luggage, music*. However, the distinction is not one between words, but between ways of using words for referential purposes. This is brought out by examples such as *There's no chicken in the yard, There's no chicken in the soup.*

/countable/	
Definition	Property of the relation of reference for nouns and nominal groups, expressing that the target domain is viewed as made up of well-defined individual instances, as opposed to being viewed as a homogeneous mass or substance.
-- Source	Adapted from: H. Bunt (2006) "Mass Expressions", in Encyclopedia of Language and Linguistics, 2nd Edition, Keith Brown, editor. Amsterdam: Elsevier, 5757-5760.
Explanation	A 'count noun', i.e. a noun used as referring in a countable manner, can take plural forms, distinctive determiners and cardinal numerals.
Example	*a farmer, many/three farmers*

/nonCountable/	
Definition	Property of the relation of reference for nouns and nominal groups, expressing that the target domain is viewed as not being made up of well-defined individual instances, but rather as a homogeneous mass or substance.
-- Source	Adapted from: H. Bunt (2006) "Mass Expressions", in Encyclopedia of Language and Linguistics, 2nd Edition, Keith Brown, editor. Amsterdam: Elsevier, 5757-5760.
Explanation	A 'mass noun', i.e. a noun used as referring in a noncountable manner, cannot take both singular and plural forms, takes different determiners than 'count nouns', and takes amount expressions like *Two litres of*, rather than cardinal numerals.
Example	*some coffee, two litres of water; much wine*

Definiteness Data Categories

These data categories are concerned with semantic and grammatical aspects of the use of referring expressions, mainly noun phrases, in relation to whether the expression should be taken to indicate particular, arbitrary, or prototypical members of a domain of reference, and to the assumed familiarity of speaker and/or addressee with referents.

/definiteness/	
Conceptual Domain	/definiteIdentifiableTerm/ /genericTerm/ /indefiniteTerm/ /nonSpecificTerm/ /specificTerm/
Definition	Grammaticalization of indentifiability of referents on the part of a speaker or addressee.
-- Source	http://www.sil.org/linguistics/GlossaryOfLinguisticTerms/WhatIsDefiniteness.htm. Hawkins, John A. (1978) Definiteness and indefiniteness: A study in reference and grammaticality prediction. London: Croom Helm.
-- Note	This notion of definiteness is a grammatical rather than a semantic one.

/definiteTerm/	
Definition	Grammatical expression that the referent(s) of an expression is/are presumed to be identifiable by both speaker and addressee.
-- Source	http://www.sil.org/linguistics/GlossaryOfLinguisticTerms/WhatIsDefiniteness.htm. Hawkins, John A. (1978) Definiteness and indefiniteness: A study in reference and grammaticality prediction. London: Croom Helm.
Example	Yesterday, I saw a lion. (*The lion* / *he*) was hungry.

/indefiniteTerm/	
Definition	Indication that the referent(s) of an expression is/are not presumed to be identifiable by both speaker and addressee.
-- Source	http://www.sil.org/linguistics/GlossaryOfLinguisticTerms/WhatIsDefiniteness.htm. Hawkins, John A. (1978) Definiteness and indefiniteness: A study in reference and grammaticality prediction. London: Croom Helm.
Example	Yesterday, I saw (*a lion / some lion/ somebody*).

/specificity/	
Conceptual Domain	/specificTerm/ /nonSpecificTerm/ /genericTerm/
Definition	Attribute of the relation of reference for nouns and nominal groups, expressing whether the speaker is referring to a particular element (or particular elements) of a domain of reference that is mentioned, or whether he is referring to any element(s) of that domain, or to a prototypical element.
Source	Harry Bunt, adapted from Kamp, Hans and uwe Reyle1993) From Discourse to Logic .Berlin:Springer and http://www.sil.org/linguistics/GlossaryOfLinguisticTerms/WhatIsDefiniteness.htm

/nonSpecificTerm/	
Definition	Referring expression, Intended to refer to any, unidentified element(s) of a given domain of reference that is mentioned.
-- Source	Harry Bunt, adapted from Kamp, Hans and uwe Reyle1993) From Discourse to Logic .Berlin:Springer and Hawkins, John A. (1978) Definiteness and indefiniteness: A study in reference and grammaticality prediction. London: Croom Helm.
Example	Minna is fond of Norwegian men, so she has decided that one day she wants to marry *a Norwegian*.

/specificTerm/	
Definition	Referring expression, Intended to refer to a particular element (or particular elements) of a given domain of reference that is mentioned.
-- Source	Harry Bunt, adapted from Kamp, Hans and uwe Reyle1993) From Discourse to Logic .Berlin:Springer and Hawkins, John A. (1978) Definiteness and indefiniteness: A study in reference and grammaticality prediction. London: Croom Helm.
Example	Minna wants to marry *the Norwegian that she met on holidays last year*.

/genericTerm/	
Definition	Indication that the expression refers to any member of a class as a representative of its class.
-- Source	Adapted from: http://www.sil.org/linguistics/GlossaryOfLinguisticTerms/WhatIsDefiniteness.htm. Hawkins, John A. (1978) Definiteness and indefiniteness: A study in reference and grammaticality prediction. London: Croom Helm.
Example	(*Lions / the lions / a lion / the lion*) are/is (a) noble beast(s

3.3 Dialogue acts

/communicativeFunction/	
Definition	Property of a dialogue act that defines how the act's semantic content is intended to influence the dialogue context through the understanding of the speaker's communicative behaviour.
-- Source	Adapted from: Bunt (2005).
-- Note	The communicative function of a dialogue act is a similar notion as the illocutionary force of a speech act. A dialogue participant is often said to perform a certain dialogue act, like a request, when the strictly accurate description should be that the participant performs certain communicative behaviour, which is interpreted as a dialogue act with the communicative function 'request'.

Information Seeking Functions

/question/	
Conceptual Domain	/directQuestion/ /indirectQuestion/ /
Definition	Dialogue act where the speaker, S, wants to know something which S assumes the addressee, A, might know. S puts pressure on A to provide this information, conditional on A possessing that information.
-- Source	Commonplace
-- Note	Related terminology in other schemes: Question (LINLIN and many other schemes) and Info-Request (DAMSL).

/directQuestion/	
Conceptual Domain	/setQuestion/ /propositionalQuestion/ /alternativeQuestion/ /checkQuestion/
Definition	Dialogue act where the speaker, S, wants to know something which S assumes the addressee, A, to know. S puts pressure on A to provide this information,
-- Source	Commonly used as contrasting with /indirectQuestion/

/setQuestion/	
Broader Concept	/question/
Definition	Dialogue act where the speaker, S, wants to know which elements of a certain set have a named property. S puts pressure on the addressee, A, to provide S with this information. S believes that at least one element of the set has the named property and that A knows which are the elements of the set that have the property.
-- Source	DAMSL; DIT
-- Note	Related terminology in other schemes: QUERY-W (HCRC MapTask), WH-Question (SWBD-DAMSL) and WHQ (TRAINS).
Explanation	A set question corresponds to what is commonly termed a WH-question in the literature. The term *set* is preferred because: (a) it clearly separates form from function by removing any oblique reference in the label to syntactic criteria for the identification of such acts; and (b) it is not a language specific term (it may be further noted that even in English, not all questioning words begin with 'wh', e.g. "How?").
Example	"What time does the meeting finish?"

/propositionalQuestion/	
Broader Concept	/question/
Definition	Dialogue act where the speaker, S, wants to know whether a certain proposition is true or false. S believes that the addressee, A, knows that information, and puts pressure on A to inform S whether the proposition is true or false.
-- Source	DAMSL; DIT
-- Note	Related terminology in other schemes: QUERY-YN (HCRC MapTask), Yes-No-Question (SWBD-DAMSL) and YNQ (TRAINS).
Explanation	A propositional question corresponds to what is commonly termed a YN-question or polarity question in the literature. The term 'propositional' is preferred because: (a) it clearly separates form from function by removing any oblique reference in the label to syntactic criteria for the identification of such acts; and (b) it is not a language specific term.

SWBD-DAMSL for example conflates form and function by distinguishing between propositional questions that are marked explicitly by subject inversion (yes-no questions) and those that are marked by intonation alone (declarative questions). However, though they may have different realisations, these are in fact performing the same function. |
| Example | "Have you got a haystack on your map?" |
| -- Source | HCRC MapTask |

/alternativesQuestion/	
Broader Concept	/question/
Definition	Dialogue act where the speaker, S, wants to know which one from a given list of alternative propositions is true; S believes that exactly one element of that list is true; S believes that the addressee, A, knows which of the alternative propositions is true, and S puts pressure on A to provide this information.
-- Source	DAMSL; DIT
-- Note	Related terminology in other schemes: QUERY-W (HCRC MapTask) and Or-Question/Or-Clause (SWBD-DAMSL).
Explanation	It is less common in annotation schemes to specifically distinguish the concept of alternativesQuestions from setQuestions (although it is much more common in more general literature on interrogatives, see for instance: Tsui 1994). However, whereas it is common for the concept setQuestion to carry the expectation that all members of the set with a given property should be returned by the addressee, for an alternativesQuestion the expectation is that there will be exactly one. The different preconditions and effects indicate that these are semantically differing concepts, and they have been treated as such here.
Example	"Are you taking the train to Amsterdam or to Rotterdam?"

/checkQuestion/	
Broader Concept	/question/
Definition	Dialogue act where the speaker, S, wants to know whether a given proposition is true, about which S holds an uncertain belief that it is true S. S believes that A knows whether the proposition is true or not, and puts pressure on A to provide this information
-- Source	DIT
-- Note	Related terminology in other schemes: CHECK (HCRC MapTask), Tag Question (SWBD-DAMSL), Tag (TRAINS) and Request_Comment (Verbmobil)
Example	"John is coming to the party, isn't he?"

/indirectQuestion/	
Conceptual Domain	/indirectSetQuestion/ /indirectPropositionalQuestion/ /indirectAlternativeQuestion/
Definition	Dialogue act where the speaker, S, wants to know something, which S has no evidence whether the addressee, A, knows. S puts pressure on A to provide this information, if possible.
-- Source	DIT; literature on indirect speech acts
-- Note	An indirect question differs from a question tout court in that the speaker of the indirect question does not assume that the addressee knows the answer, as is the case in a (direct) question. Note that this difference is not really a difference in the speaker's beliefs, but rather a difference in the beliefs that the behaviour INDICATES.

/indirectSetQuestion/	
Broader Concept	/indirectQuestion/
Definition	Dialogue act where the speaker, S, wants to know which elements of a certain set have a named property. S believes that at least one element of the set has that property, but S does not know whether the addressee, A, knows which are the elements of the set that have the property. S puts pressure on A to provide S with this information, if possible.
-- Source	DIT
-- Note	Distinguishing indirect questions as a separate class of act rather than including them within the class of direct questions has not been attempted in other schemes than the DIT scheme, hence there are no other related concepts explicitly available in other schemes.
Example	"Can you tell me what time the meeting finishes?"

/indirectPropositionalQuestion/	
Broader Concept	/indirectQuestion/
Definition	Dialogue act where the speaker, S, wants to know whether a certain proposition is true or false. S believes that the addressee, A, might know that information, and puts pressure on A to inform S whether the proposition is true or false, if possible.
-- Source	DIT
-- Note	Distinguishing indirect questions as a separate class of act rather than including them within the class of direct questions has not been attempted in other schemes than the DIT scheme, hence there are no other related concepts explicitly available in other schemes.
Example	"Do you know if Anne will come to the meeting?"
-- Source	DIT

/indirectAlternativesQuestion/	
Broader Concept	/indirectQuestion/
Definition	Dialogue act where the speaker, S, wants to know which one from a given list of alternative propositions is true; S believes that exactly one element of that list is true; S believes that the addressee, A, might know which of the alternative propositions is true, and S puts pressure on A to provide this information.
-- Source	DIT
-- Note	Because including the indirect question as a separate type of act rather than simply encompassing it within the direct question has not been attempted in any other scheme than the DIT scheme, there are no other related concepts explicitly available in other schemes.
Example	"Can you tell me if the next meeting is on Friday 12 or on Friday 19?"

Information Providing Functions

/inform/	
Definition	Dialogue act where the speaker, S, wants to make certain information known to the addressee, A; S believes that the information is correct.
-- Source	Commonplace
-- Note	Related terminology in other schemes: Assert (DAMSL), Explain (HCRC MapTask), Update (LINLIN), Statement (SWBD-DAMSL) and Inform (DIT, TRAINS, Verbmobil).
Explanation	The inform function may also have more specific rhetorical functions such as: explain, elaborate, exemplify and justify, but these all fall under the more generic function here defined.
Example	"The 6.34 to Breda leaves from platform 2."

/agreement/	
Definition	Dialogue act where the speaker, S, wants to inform the addressee, A, that the information which S has reason to believe that A believes is correct, is in fact correct.
-- Source	DIT
-- Note	Related terminology in other schemes: Accept (DAMSL, SWBD-DAMSL, TRAINS, Verbmobil).
Explanation	DAMSL and SWBD-DAMSL use "Agreement" to refer to various degrees in which a speaker accepts some previous proposal, plan, opinion or statement; "accept" is one of these degrees; "reject" is another. Note: in this definition /agreement/ inherits the elements in the definition of /inform/.
Example	(1) "Exactly" (2) "That would be perfect"
-- Source	(1) DIT (2) Verbmobil

/disagreement/	
Definition	Dialogue act where the speaker, S, wants to inform the addressee, A, that the information which S has reason to believe that A believes is correct, is in fact incorrect.
-- Source	DIT
-- Note	Related terminology in other schemes: Reject (DAMSL, SWBD-DAMSL, Verbmobil) and Denial (TRAINS).
Explanation	DAMSL and SWBD-DAMSL use "Agreement" to refer to various degrees in which a speaker accepts some previous proposal, plan, opinion or statement; "accept" is one of these degrees; "reject" is another. Note: in this definition /disagreement/ inherits the elements in the definition of /inform/.
Example	"No, that's not right."

/correction/	
Definition	Dialogue act where the speaker, S, wants to inform the addressee, A, that the information which S has reason to believe that A believes is correct, is in fact incorrect and should be replaced by the information that S offers.
-- Source	DIT
-- Note	In this definition /correction/ inherits the elements in the definition of /disagreement/.
Example	"To Montreal, not to Ottawa."

/answer /	
Conceptual Domain	/setAnswer/ /propositionalAnswer/ /confirm/ /disconfirm/
Definition	Dialogue act where the speaker, S, believes that the addressee, A, wants to know certain information which S is providing.
-- Source	DIT
-- Note	Related terminology in other schemes: Answer (DAMSL, LINLIN).

/setAnswer/	
Broader Concept	/answer/
Definition	Dialogue act where the speaker, S, believes that the addressee, A, wants to know which elements of a certain domain have a certain property (for instance, because A has asked for this information); S believes the set of elements give to be correct and complete.
-- Source	Commonplace
-- Note	Related terminology in other schemes: Reply-W (HCRC MapTask).
Example	"On Mondays and Thursdays" (in response to the question "On what days does John teach Mathematics?")

/propositionalAnswer/	
Broader Concept	/answer/
Definition	Dialogue act where the speaker, S, believes that the addressee, A, wants to know the truth of a certain statement (for instance, because A has asked for this information); S believes the information given to be correct.
-- Source	DIT
-- Note	Related terminology in other schemes: Reply-Y/Reply-N (HCRC MapTask), Yes-Answer/No-Answer (SWBD-DAMSL).
Explanation	This concept is sometimes separated out according to whether it is a positive or a negative propositional answer to a question. There is however no reason to do this as the propositional question carries no prior assumption on the speaker's part as to whether the answer will be positive or negative. Generalising propositional answers in this way also allows us to encompass in one concept the answers to alternatives questions as well.
Example	"Yes", "No" (in response to the question "Is it raining?").

/confirm/	
Broader Concept	/answer/
Definition	Dialogue act where the speaker, S, believes that the addressee, A, wants to know whether his (A's) uncertain belief that the information queried by a check is correct.
-- Source	DIT; Verbmobil
-- Note	Related terminology in other schemes: Reply-Y (HCRC MapTask), Yes-Answer (SWBD-DAMSL).
Example	"Indeed"

/disconfirm/	
Broader Concept	/answer/
Definition	Dialogue act where the speaker, S, believes that the addressee, A, wants to know whether his (A's) uncertain belief that the information queried by a check is incorrect.
-- Source	DIT
-- Note	Related terminology in other schemes: Reply-N (HCRC MapTask) and No-Answer (SWBD-DAMSL).
Example	French "Si"; Danish "Jo"; Dutch: "Toch niet" and "Toch wel"

Action Discussion Functions

/instruct/	
Definition	Dialogue act where the speaker, S, wants the addressee, A, to carry out a named action in the manner or with the frequency described; S assumes that A is able and willing to carry out the action.
-- Source	DIT; HCRC Map Task
-- Note	Related terminology in other schemes: Action-directive (DAMSL).
Example	"Go right round, ehm, until you get to just above them."
-- Source	HCRC MapTask

/suggest/	
Definition	Dialogue act where the speaker, S, wants the addressee, A, to know that a named action is potentially promising for achieving a certain goal, which is either named explicitly or contextually salient.
-- Source	DIT; TRAINS; Verbmobil
-- Note	Related terminology in other schemes: Open-option (DAMSL).
Example	"Let's wait for the meeting to finish."

/request/	
Definition	Dialogue act where the speaker, S, wants the addressee, A, to perform a named action in the manner or with the frequency described, conditional on A's consent.
-- Source	DIT; TRAINS; Verbmobil
Example	"Please take the rubbish out for me"

/acceptRequest/	
Definition	Dialogue act where the speaker, S, commits himself to perform an action that was requested.
-- Source	DIT
-- Note	Related terminology in other schemes: Accept (DAMSL, SWBD-DAMSL, TRAINS, Verbmobil).
Example	"Sure"

/declineRequest/	
Definition	Dialogue act where the speaker, S, indicates unwillingness to perform an action that was requested.
-- Source	DIT
-- Note	Related terminology in other schemes: Reject (DAMSL, SWBD-DAMSL, TRAINS, Verbmobil).
Example	"Not now"

/promise/	
Definition	Dialogue act where the speaker, S, commits himself unconditionally to perform a certain action in the manner or with the frequency described. S believes that the addressee, A, prefers that the action be performed (rather than not be performed).
-- Source	DIT, Searle (1969)
-- Note	Related terminology in other schemes: Promise (TRAINS)
Example	"I will wash the car for you tonight"

/offer/	
Definition	Dialogue act where the speaker, S, commits himself to perform a certain action, conditional on A's consent that S do so.
-- Source	DAMSL; DIT
-- Note	Related terminology in other schemes: Offer (TRAINS).
Example	"Shall I open the door for you?" "Would you like to have coffee?"

/acceptOffer/	
Definition	Dialogue act where the speaker, S, informs the addressee, A, that S agrees to A performing the action that A has offered to perform.
-- Source	DIT
-- Note	Related terminology in other schemes: Accept (DAMSL, SWBD-DAMSL, TRAINS, Verbmobil).
Example	"Yes please"

/declineOffer/	
Definition	Dialogue act where the speaker, S, informs the addressee, A, that S does not agree to A performing the action that A has offered to perform.
-- Source	DIT
-- Note	Related terminology in other schemes: Reject (DAMSL, SWBD-DAMSL, TRAINS, Verbmobil).
Example	"No thanks"

Feedback Functions

/positiveAutoFeedback/	
Definition	Dialogue act where the speaker, S, wants the addressee A to know that S believes that S's attention to, perception, interpretation, evaluation or execution of the previous utterance was successful.
-- Source	DIT
-- Note	Related terminology in other schemes: Signal-Understanding (DAMSL), Acknowledge (HCRC MapTask, SWBD-DAMSL) Ack (TRAINS) and Feedback_Positive (Verbmobil).
	This type of feedback could be further broken down into more specific areas (dealing with the speaker's attention, perception, interpretation, evaluation and execution), as exemplified in the DIT schema. Such fine distinctions have hitherto not been made in other annotation schemes however, so a simplified top level data category is defined here.
Example	"Uh-huh"

/positiveAlloFeedback/	
Definition	Dialogue act where the speaker, S, wants the addressee, A, to know that S believes that A's attention to, perception, interpretation, evaluation or execution of the previous utterance was successful.
-- Source	DIT
-- Note	The distinction between whether feedback is about S's (auto) understanding or A's (allo) is only made within the DIT scheme.
	This type of feedback could be further broken down into more specific areas (dealing with the addressee's attention, perception, interpretation, evaluation and execution).
Example	"You've got it!"

/negativeAutoFeedback/	
Definition	Dialogue act where the speaker, S, wants the addressee, A, to know that S believes that S's attention to, perception, interpretation, evaluation or execution of the previous utterance encountered a problem.
-- Source	DIT
-- Note	Related terminology in other schemes: Signal-Non-Understanding (DAMSL) and Feedback_Negative (Verbmobil).
	This type of feedback could be further broken down into more specific areas (dealing with the speaker's attention, perception, interpretation, evaluation and execution), as is exemplified in the DIT schema. Such fine distinctions have hitherto not been made in other annotation schemes however, so a simplified top level data category is defined here.
Example	"Sorry?"

/negativeAlloFeedback/	
Definition	Dialogue act where the speaker, S, wants the addressee, A, to know that S believes that A's attention to, perception, interpretation, evaluation or execution of the previous utterance encountered a problem.
-- Source	DIT
-- Note	The distinction between whether feedback is about S's (auto) understanding or A's (allo) is only made within the DIT scheme. This type of feedback could be further broken down into more specific areas (dealing with the addressee's attention, perception, interpretation, evaluation and execution).
Example	"No, no, no, no, no"

/feedbackElicitation/	
Definition	Dialogue act where the speaker, S, wants to know whether A's attention to, perception, interpretation, evaluation or execution of the previous utterance was successful.
-- Source	DIT
-- Note	Feedback elicitation could be further broken down into more specific areas dealing with the addressee's attention, perception, interpretation, evaluation and execution.
Example	"Okay?"

Turn Management Functions

/turnAccept/	
Definition	Dialogue act where the speaker, S, agrees to take the turn when he is requested to do so.
-- Source	DIT
-- Note	Related terminology in other schemes: Take-Turn (TRAINS).
Example	A: "Would you like to say something at this point?" B: "Certainly."

/turnGive/	
Definition	Dialogue act where the speaker, S, wants the addressee, A, to take the turn.
-- Source	Common in literature on turn taking in conversation
-- Note	Occurs especially in multiparty dialogue. Related terminology in other schemes: Assign-Turn (TRAINS).
Example	"Adam?"

/turnGrab/	
Definition	Dialogue act where the speaker, S, wants to take the turn from another participant.
-- Source	DIT
-- Note	Related terminology in other schemes: Take-Turn (TRAINS).
Example	"Hold on a minute, what about the party?"

/turnKeep/	
Definition	Dialogue act where the speaker, S, wants to keep the turn.
-- Source	DIT
-- Note	Related terminology in other schemes: Keep-Turn (TRAINS).
Explanation	Utterances used for turn keeping often also have a stalling function.
Example	"Erm"

/turnRelease/	
Definition	Dialogue act where the speaker, S, wants to give other dialogue participants the opportunity to take the turn
-- Source	Common in literature on turn taking in conversation
-- Note	Related terminology in other schemes: Release-Turn (TRAINS).
Example	Speaker uses declining intonation towards the end of a contribution and subsequently pauses.

/turnTake/	
Definition	Dialogue act where the speaker, S, wants to take the turn when it is available.
-- Source	DIT
-- Note	Related terminology in other schemes: Take-Turn (TRAINS)

Time Management Functions

/stalling/	
Definition	Dialogue act where the speaker, S, wants to have a little more time to construct his contribution.
-- Source	DIT
-- Note	Related terminology in other schemes: Hold (DAMSL).
Example	"Let me see…", "Erm"
Note	Utterances used for stalling often also have a turn keeping function.

/pausing/	
Definition	Dialogue act where the speaker, S, wants to suspend the dialogue for a while because he needs some time to do something.
-- Source	DIT
-- Note	Related terminology in other schemes: Hold (DAMSL).
Explanation	Pausing occurs either in preparation of continuing the dialogue, or because something else came up which is more urgent for the speaker to attend to.
Example	"Just a moment"

Partner Communication Management Functions

/completion/	
Definition	Dialogue act where the speaker, S, wants to assist the addressee, A, by finishing or adding to the clause that A is in the middle of constructing.
-- Source	DAMSL; DIT; TRAINS
Example	S: "which should leave us plenty of time to uhhh", A: "get to city H"
-- Source	TRAINS

/correctMisspeaking /	
Definition	Dialogue act where the speaker, S, wants to correct (part of) an utterance by the addressee, A, assuming that A made a speaking error.
-- Source	DAMSL; DIT
-- Note	Related terminology in other schemes: Correction suggestion (TRAINS).
Example	S: "second engine E3 is going to uhh city H to pick up the bananas, back to A, dro…", A: "… H to pick up the oranges", S: "sorry, pick up the oranges"
-- Source	TRAINS

Own Communication Management Functions

/signalSpeakingError/	
Definition	Dialogue act where the speaker, S, wants the addressee, A, to know that S has made a mistake in speaking.
-- Source	DIT
Example	"We're going out on Tues- no, er, not Tuesday"

/selfCorrection/	
Definition	Dialogue act where the speaker, S, wants to correct an error that he made, or to improve on an infelicitous formulation that he used, within the same turn.
-- Source	Common in literature on conversation studies
-- Note	Related terminology in other schemes:
Example	"We're going out on Tues- no, er, not Tuesday, Thursday"

Contact Management Functions

/contactIndication/	
Definition	Dialogue act where the speaker, S, wants to make it known to the addressee, A, that S is ready to send messages to, and receive messages from, A.
-- Source	DIT
Example	"Yes?"

/contactCheck/	
Definition	Dialogue act where the speaker, S, wants to establish whether the addressee, A, is ready to receive messages from, and send messages to, S.
-- Source	DIT
Example	"Hey Joe!"

Discourse Structure Management Functions

/interactionStructuring/	
Definition	Dialogue act where the speaker, S, wants to explicitly indicate to the addressee, A, the function or topic of his next contributions.
-- Source	DIT
-- Note	Interaction structuring covers such phenomena as topic introduction, dialogue act announcement and topic closing.
Example	"A question…"

Social Obligations Management Functions

/initialGreeting/	
Definition	Dialogue act where the speaker, S, wants the addressee, A to know that S is present and aware of A's presence; S puts pressure on A to acknowledge this.
-- Source	DIT
-- Note	Related terminology in other schemes: Greet (Verbmobil).
Explanation	Greetings usually come in initiative-response pairs within a dialogue; this data category corresponds to the first element of such a pair.
Example	"Hello!"

/returnGreeting/	
Definition	Dialogue act where the speaker, S, wants to acknowledge that S is aware of the presence of the addressee, A, and of A having signalled his presence to S; S has been pressured to respond to an initialGreeting by A.
-- Source	DIT
-- Note	Related terminology in other schemes: Greet (Verbmobil).
Explanation	Greetings usually come in initiative-response pairs within a dialogue; this data category corresponds to the second element of such a pair.
Example	"Hello!"

/initialSelfIntroduction/	
Definition	Dialogue act where the speaker, S, wants to make himself known to the addressee, A; S puts pressure on A to acknowledge this.
-- Source	DIT
Explanation	Introductions usually come in initiative-response pairs within a dialogue; this data category corresponds to the first element of such a pair.
Example	"I'm Jack"

/returnSelfIntroduction/	
Definition	Dialogue act where the speaker, S, wants to make himself known to the addressee, A; S has been pressured to respond to an initialSelfIntroduction by A.
-- Source	DIT
Explanation	Introductions usually come in initiative-response pairs within a dialogue; this data category corresponds to the second element of such a pair.
Example	"Nice to meet you Jack, I'm Jill"

/initialGoodbye/	
Definition	Dialogue act where the speaker, S, wants the addressee, A, to know that S intends the current utterance to be his final contribution to the dialogue; S puts pressure on A to acknowledge this.
-- Source	DIT
-- Note	Related terminology in other schemes: Bye (Verbmobil).
Explanation	Goodbyes usually come in initiative-response pairs within a dialogue; this data category corresponds to the first element of such a pair.
Example	"Bye, see you later"

/returnGoodbye/	
Definition	Dialogue act where the speaker, S, wants to acknowledge his awareness that the addressee, A, has signalled his final contribution to the dialogue and S signals in return his agreement to end the dialogue; S has been pressured to respond to an initialGoodbye by A.
-- Source	DIT
-- Note	Related terminology in other schemes: Bye (Verbmobil).
Explanation	Goodbyes usually come in initiative-response pairs within a dialogue; this data category corresponds to the second element of such a pair.
Example	"Bye, see you later"

/apology/	
Definition	Dialogue act where the speaker, S, wants the addressee, A, to know that S regrets something; S puts pressure on A to acknowledge this.
-- Source	DIT; SWBD-DAMSL
Example	"Sorry about that."

/acceptApology/	
Definition	Dialogue act where the speaker, S, wants to mitigate the addressee, A's feelings of regret; S has been pressured to respond to an apology by A.
-- Source	DIT
Example	"No problem."

/thanking/	
Definition	Dialogue act where the speaker, S, wants the addressee, A, to know that S is grateful for some action performed by A; S puts pressure on A to acknowledge this.
-- Source	DIT
-- Note	Related terminology in other schemes: Thank (Verbmobil).
Explanation	Utterances used for thanking often also indicate that the speaker wants to end the dialogue.
Example	"Thanks a lot."

/acceptThanking/	
Definition	Dialogue act where the speaker, S, wants to mitigate or respond to the addressee, A's feelings of gratitude; S has been pressured to respond to an act of thanking by A.
-- Source	DIT
Example	"Don't mention it"; Spanish: "De nada".

3.4 Semantic roles

/agent/	
Definition	Participant in an event who is animate or perceived as animate, who initiates and carries out the event intentionally or consciously, and who exists independently of the event.
-- Source	Adapted from: Dowty (1989), EAGLES, SIL, Sowa (2000) and UNL
Explanation	An agent may be animate, or only seemingly or perceived, as animate; this is so that cases of nonhuman agency such as a robot, or an institution will not be excluded from the definition, e.g. "GM offers rebates on its new models".
Example	"John [agent] built the house"

/partner/	
Definition	Participant in an event who is animate or perceived as animate, who is not the principal agent of the event, but who is intentionally or consciously involved in carrying out the event, and who exists independently of the event.
-- Source	Adapted from: FrameNet, PropBank ('Second Party') and UNL
Explanation	The semantic role of partner differs from agent principally in that the participant in question is performing the action in accompaniment to the agent, and is not the primary focus. Sometimes partner is also known as 'accompaniment' i.e. SIL and Sowa (2000). UNL distinguishes between a co-agent and a partner, but this distinction is felt to be unclear: a co-agent is simply another agent.
Example	"John [agent] built the house with Stephen [partner]"

/cause/	
Definition	Participant in an event (that may be animate or inanimate) that initiates the event, but that does not act with any intentionality or consciousness; it exists independently of the event.
-- Source	Adapted from: SIL ('Causer') and Sowa (2000) ('Effector')
Explanation	Except for the lack of intentionality of the participant, this semantic role is very similar to that of the agent and in fact shares all its other properties. The role of cause can often be identified with verbs of initiation, or causation, such as: 'to cause', 'to produce', 'to start', 'to originate', 'to occasion', 'to generate'.
Example	"The bomb [cause] started several secondary fires"

/instrument/	
Definition	Participant in an event that is manipulated by an agent, and with which an intentional act is performed.
-- Source	Adapted from: EAGLES ('Implement'), SIL, Sowa (2000) and UNL
Explanation	Some (Loos et al. 2004) would define instrument more simply as an inanimate object, which is used to implement an event. However, the semantic role of instrument can clearly also be animate (e.g. "The woman was dragged by her horse [instrument] for several meters", or even "John [instrument] threw himself at the door in a rage"), and can also take part in a state as well as an event (e.g. "The tarpaulin is tied down with rope [instrument]").
Example	"He opened the door with the key [instrument]" "The brick [instrument] hit the window and shattered it"

/patient/	
Definition	Participant in an event that undergoes a change of state, location of condition, that is causally involved or directly affected by other participants, and exists independently of the event.
-- Source	Adapted from: EAGLES, Sowa (2000) and UNL ('Object')
Explanation	Patient is distinguished from the semantic role of theme principally in that it is affected or changed by the event.
Example	"John hit Mary [patient]"

/pivot/	
Definition	Participant in a state that has a major or central role or effect in that state. A pivot is characterised as being in a certain position or condition throughout the state, and is more central to the state than a participant in theme role.
-- Source	Webster New Collegiate Dictionary (1976)
Example	"John [pivot] owns that dog [theme]" "The painting [pivot] depicts an Italian landscape [theme]"

/theme/	
Definition	Participant in a state or event that is essential to the event taking place or the state being in effect. In an event, a theme does not have control over the way the event occurs and is not structurally changed by the event. In a state, a theme is characterised as being in a certain position or condition throughout the state, but is not as central to the state as a participant in a pivot role.
-- Source	Adapted from: EAGLES, Sowa (2000) and UNL ('Object')
Explanation	Theme is distinguished from the semantic role of patient principally in that it is not affected or changed by the event.
Example	"John owns that dog [theme]" "He talked about politics [theme]"

/beneficiary/	
Definition	Participant in a state or an event that is advantaged or disadvantaged by the event or state.
-- Source	Adapted from: EAGLES, SIL, Sowa (2000) and UNL
Explanation	The roles of beneficiary and recipient differ in that the role of recipient is the ultimate target of an action, whereas beneficiary is not. Also, the recipient cannot take part in a state.
Example	"John sold the car for a friend [beneficiary]" "He gave his life for his country [beneficiary]"

/source/	
Definition	Participant in an event that is the (non-locative, non-temporal) start point of an action. The source exists independently of the event.
-- Source	Adapted from: Sowa (2000)
Example	"The researcher got his idea from a book [source]"

/goal/	
Definition	Participant in an event that is the (non-locative, non-temporal) end point of an action. The goal exists independently of the event.
-- Source	Adapted from: Sowa (2000)
Explanation	The goal differs from a beneficiary in that there need not be a clear benefit and only events can have a participant towards whom the action is directed.
Example	"Edison customers [goal] have received electric services since April"

/result/	
Definition	Participant in an event that is an inanimate entity (or entities) that describes a terminal point which will be reached in the normal course of events or in all possible courses of events. If it is reached, then the process or event does not continue. Result has no independent existence and did not exist prior to the event taking place.
-- Source	Adapted from: Sowa (2000)
Explanation	Result is the completed point of a process, and unlike goal is dependent upon the event for its existence.
Example	"She built a house [result]"

/reason/	
Definition	Participant that represents the set of facts or circumstances explaining why a state exists or an event occurs. In other words, the reason is the source of the state or the cause of the event.
-- Source	Adapted from: Sowa (2000) ('Matter') and UNL
Explanation	The role of reason can be distinguished from that of purpose, because purpose indicates the objective or goal of an agent that acts intentionally. However, the role of agent is not applicable to states. Reason is also different from manner and method in that reason describes why the event is being carried out, while manner and method describe how it is being carried out.
Example	"People love giant pandas because they look like teddy bears [reason]" "Due to the spray from the hose [reason] the ink ran down the page before she could read it."

/purpose/	
Definition	Participant that represents the set of facts or circumstances that describe what an agent wishes or intends to accomplish by performing some intentional action.
-- Source	Adapted from: EAGLES and UNL
Explanation	The notion of purpose implies intentional action. This property of purpose makes it impossible to have this semantic role in a state. The role of purpose differs from that of reason in that purpose describes the aims of an agent, whereas reason indicates why the event is carried out or the state is true. Contrast the following examples: (a) "The authorities extradited him to the US for drug trafficking [reason]" and (b) "The authorities extradited him for trial [purpose] in the US".
Example	"The robber tied Harry to the chair to stop him from getting away [purpose]"

/time/	
Conceptual Domain	/beginning/ /end/
Definition	Participant that indicates an instant or an interval of time during which a state exists or an event took place.
-- Source	Adapted from: EAGLES, SIL, Sowa (2000) and UNL
Explanation	Just as with location, time is divided into three other subroles: beginning, end and duration.
Example	"Dinner is at 6 o'clock [time]" "Pat and Kim are completely broke at the moment [time]"

/manner/	
Definition	Participant that represents the way or style of performing an action or the degree/strength of the cognitive state or perception (in other words, the content of manner would answer the question 'in what way was the action performed?')
-- Source	Adapted from: EAGLES, SIL and UNL
Explanation	It should be noticed here that the role of manner differs from instrument in that manner describes an event as a whole, whereas instrument characterises one of the components of event or state; manner is an abstract thing whereas instrument is a concrete one (the latter also differentiates instrument from means and method). The role of manner includes secondary effects (quietly, loudly), and general descriptions comparing events or states (in the same way). It may also indicate salient characteristics of theme, experiencer, agent, etc., e.g. coldly, deliberately, eagerly, carefully, etc.
Example	"The tiny stick was fastened tightly [manner] to his wrist." "Lester was coldly [manner] polite."

/medium/	
Definition	Participant that represents the physical or abstract setting, entity or channel used by an agent or agents in an event or process.
-- Source	Adapted from: Sowa (2000)
Explanation	As the medium always implies the presence of an agent because it defines the physical or abstract means of conveying the action, this semantic role is not relevant for states. There is some discussion about the difference between the semantic role of medium and that of instrument. To illustrate the problem, consider the example: "Joanna peeked at John through the binoculars". Here 'the binoculars' could be said to be the instrument used to perform the action of peeking, whereas 'through the binoculars' could be said to be the medium. The main difference is that while medium is only ever a semantic role for a participant in an event, instrument can be present for a state as well.
Example	"The students heard the news on the radio [medium]"

/means/	
Definition	Participant that represents an abstract entity (or entities) or a procedure of the action in terms of component steps of an event. The means is the method by which an intentional act is performed by an agent.
-- Source	Adapted from: UNL
Explanation	The role means differs from instrument in that means describes abstract things (abstract means and methods) while the instrument describes concrete things. This distinction is exemplified by: (a) "I sliced the cucumber in 1/8th inch slices with a knife [instrument]" and (b) "I sliced the cucumber in 1/8th inch slices by marking the intervals with a ruler [means]". Sometimes this distinction is not really very clear-cut: (c) John ate the sushi with chopsticks [instrument]" and (d) John ate the sushi using chopsticks [means?]".
Example	"The mayor delayed the ribbon ceremony by pretending to be ill [means]" "He had to button his sleeve by holding the cuff in his mouth [means]"

/setting/	
Definition	Participant that represents the abstract setting for the occurrence of an event, or a state, or a fact.
-- Source	Adapted from: EAGLES ('Scene'), UNL ('Condition') and FrameNet ('Circumstances').
Example	"Libya employed chemical weapons in the conflict [setting]" "Liverpool pasted PSV in the match [setting] last night"

/location/	
Conceptual Domain	/initialLocation/ /finalLocation/
Definition	Participant that represents the place where an event occurs, or a state that is true, or a thing that exists.
-- Source	Adapted from: EAGLES ('Place'), SIL ('Locative') and Sowa (2000)
Example	"She was cooking in the kitchen [location]" "Tim was sitting beside me [location] when the bomb went off" "It's very cool in here [location]"

/initialLocation/	
Broader Concept	/location/
Definition	Participant that indicates the place where an event begins or a state becomes true.
-- Source	Adapted from: EAGLES, Sowa (2000) ('Origin') and UNL ('Initial Place')
Example	"Half way out of the harbour [initialLocation] the sea becomes really deep"

/finalLocation/	
Broader Concept	/location/
Definition	Participant that indicates a place where an event ends or a state becomes false.
-- Source	Adapted from: EAGLES, Sowa (2000) ('Destination') and UNL ('Final Place')
Example	"The race finishes in Tilburg [finalLocation]"

/path/	
Definition	Participant that indicates an intermediate place or state or trajectory between two locations, or in a designated space.
-- Source	Adapted from: Sowa (2000)
Example	"The two men climbed the slippery slope [path]"

/distance/	
Definition	Length or extent of space.
-- Source	Adapted from: WordNet
Example	"Terry jogged for 2 miles [distance]"

/amount/	
Definition	Quantity denoting participant.
-- Source	Adapted from: PropBank ('Extent'), FrameNet ('Amount'), UNL ('Quantity'), Sowa (2000) ('Amount'/'Measure') and EAGLES ('Quantity').
Example	"The enormous number [amount] of people present was staggering" "I have several [amount] brothers"

/attribute/	
Definition	Property of an entity or entities.
-- Source	Adapted from: FrameNet ('Parameter'), UNL, Sowa (2000) and EAGLES.
Example	"Roses are red [attribute]"

/frequency/	
Definition	Number of occurrences within a given time span.
-- Source	Adapted from: WordNet.
Example	"He washed the car religiously twice a week [frequency]".

4   Concluding remarks

In this document, we have outlined a set of selection criteria for the inclusion of a concept within a set of interoperable semantic descriptors, and we have proposed sets of core descriptors in the form of data categories, following ISO standard 12620, for four domains of semantic information: coreference, semantic roles, dialogue acts, and time (where for the domain of time we have suspended the work in view of the ISO project on developing an international standard for temporal annotation, that has started in 2006 as a spin-off of the LIRICS work).

These descriptors have been discussed with members of the (computational) semantics community. In order to ensure wide support for the activity of designing sets of semantic descriptors using methodologies from ISO, we have set up the Working Group on the Representation of Multimodal Semantic Information within ACL-SIGSEM, the Special Interest Group on Computational Semantics of the Association for Computational Linguistics. Moreover, within ISO TC 37/SC 4 the Thematic Domain Group 3, Semantic Content was established as an ISO expert group in the domain as the LIRICS WP work. The proposed set of semantic data categories documented in this deliverable has, in various stages of development, been the topic of extensive discussion with peers in the SIGSEM Working Group and in the ISO Thematic Domain Group, at joint LIRICS/SIGSEM/ISO workshops. The final proposal documented here has been endorsed by the ISO Thematic Domain Group at its meeting in April 2007 in Paris.

The proposed semantic data categories have been put to the test in the LIRICS projects for their applicability and usability, by developing test suites of practical examples of semantic annotation using these semantic descriptors for five European languages (see LIRICS Deliverable D4.4). This has helped to refine these data categories, to identify flaws or omissions, and check the general viability of the set for use in NLP implementations and systems. The data categories for definiteness and specificity, relevant for coreference annotation, have for instance been redefined. A number of possible improvements we believe could best be made in the annotation guidelines that support the use of the data categories (see LIRICS Deliverable D4.4), rather than in the data categories themselves. The test suites have thus provided a feedback mechanism for establishing the consistency, reliability and comprehensiveness of the data categories for semantic annotation.

The construction of test suites in some cases led to the suggestion to add certain data categories. Inmost of these cases we have refrained from doing so, since the proposed set of data categories cannot be exhaustive anyway, and should be considered to open for extension. It would, more generally, be overly presumptuous to think that the data categories proposed here are the last word in establishing data categories for semantic annotation. First, the field of natural language semantics is an active area of research, with unresolved issues whose further investigation should be expected to have repercussions for any proposed (set of) descriptors for semantic annotation. Some of these issues have been discussed in relation to dialogue act annotation by Bunt & Schiffrin (2007) and in relation to semantic roles by Petukhova, Schiffrin & Bunt (2007). Second, different linguistic research activities as well as different applications of natural language processing may require specific types of semantic information to be captured by annotations using quite specific descriptors, or may impose a particular level of granularity on annotations.

Therefore, no set of semantic data categories can be closed; instead, the current proposal presents a set of core semantic descriptors that can be refined to achieve finer granularity or extended to capture other or additional semantic distinctions according to the particular needs of specific research activities or language engineering applications.

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