The Lexical Semantics of *Imaginings*—A Corpus-Based Analysis

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Abstract

In this paper, I propose a decompositional lexical semantic analysis of the plural noun *imaginings*. The data for this study are sourced from the Corpus of Historical American English (COHA), and as analytical framework an object-oriented semantics based on the Unified Eventity Representation (UER) is deployed. After presenting the background to this study and introducing the data and methods, I discuss the results of the corpus data analyses. Frequencies across genres and decades, collocated adjectives and their evaluative strength, coordinated nouns, nominal genitives preceding the target word, and prepositional phrases embedded in the target word's noun phrase are screened for their contribution to the meaning specification. The results feed into the development of a lexical semantic description for *imaginings*, and substantiate that the semantics of *imaginings*—and its corresponding verb *imagine*—are closely related to that of *remember*.

Keywords: lexical meaning; Corpus of Historical American English (COHA); mental state; decompositional semantics; *imagine*; *remember*

The title of this collection of studies is *Past Imaginings*. In order to contribute to a deconstruction of the title, I present a lexical semantics study of *imaginings* in this paper, based on the Corpus of Historical American English (COHA) (Davies, 2010–). I do so through a decompositional semantics approach, i.e. an approach to lexical semantics which identifies the meaning components of the underlying concept and their structural composition (see Engelberg 2011, 2019; Schalley 2004a, 2004b; Wunderlich 1996, among others).

   The following section provides the background to this study. It motivates the study and discusses both relevant previous studies and the theoretical framework employed herein. This is followed by a section on the data and methods, which outlines how the corpus data contributes to the analysis. In the subsequent results section, the analysis of the corpus data is presented, laying the foundation for the ensuing discussion of the lexical meaning of *imaginings*. The paper concludes with a summary, delimitations, and a brief consideration of *past imaginings* specifically, and hence takes us back full circle to the title of this collection of studies.

Background

To the best of my knowledge, there are no lexical semantic studies available that specifically address the lexical semantics of mental state or process nouns such as *imaginings*. The most closely related studies investigate memory, focusing on verbs such as *remember*, *remind*, and *forget*. Memory has been the subject of study both cross-linguistically (see the contributions to Amberber 2007) and with a specific focus on English (Jørgensen 1990; Stephenson 2010; Tao 2001, 2003; Van Valin & Wilkins 1992). Neuropsychological studies appear to support the idea that episodic recollections (remembering) and simulations (imagining) activate similar brain regions (Anderson, Dewhurst & Nash 2012: 357, see also, e.g., Addis, Wong & Schacter 2007). Crane, Lind and Bowler (2013: 158) posit:

> As well as being defining properties of episodic memory, autonoetic awareness and self-referential cognition are crucial for episodic future thinking (imagining future events). Not only are these two cognitive skills thought to be supported by the same underlying cognitive process […], they are known to share the same core neurocognitive system […]. Evidence for this hypothesis stems from research that demonstrates similar characteristics of both past and future thinking.

Given the dearth of directly relevant studies, the above neuropsychological studies provide me with a welcome starting point and motivate a closer look at studies on *remember*. Four of these studies—Jørgensen (1990), Stephenson (2010), and Tao (2001, 2003)—predominantly discuss the complement types of *remember*, its syntactic environments, or its usage; they are thus of limited value to a decompositional semantic investigation. This leaves Van Valin and Wilkins (1992) as the one study that applies a decompositional approach to English *remember*. I supplement the discussion of Van Valin and Wilkins (1992) with Schalley and Kuhn's (2007) treatment of German *(sich) erinnern* ('remember, remind, recall, recollect'), as the latter is based on Van Valin and Wilkins' work and applies the theoretical framework that is used in this study, too, the Unified Eventity Representation (UER).

Van Valin and Wilkins' (1992) base their semantic description on Dowty's (1979) decompositional approach and Vendler's (1967) verb classification scheme (amongst others), and they maintain:

> As a first approximation, we can represent the achievement sense of *remember* as BECOME **think.again** (x) **about something.be.in.mind.from.before** (y). Following the Dowty system, the representation of the activity version of *remember* is the same as the one above minus BECOME. It is not entirely clear which of the two versions is basic, but the fact that the full range of complement types is compatible only with the achievement reading suggests strongly that it is the more basic of the two. (Van Valin & Wilkins 1992: 511)

As example of the achievement interpretation they provide (1), and the activity interpretation is exemplified by (2) (Van Valin & Wilkins 1992: 509):

(1) *John suddenly remembered the faucet he left on.*
(2) *John consciously remembered the names of all of the linguists that he met at the party.*

Yet, the semantic contribution of the adverbs to these interpretations is not to be underestimated: without *suddenly*, (1) could also be interpreted as an activity, and without *consciously*, (2) could be interpreted as indicating a change of states and hence feature a BECOME operator. What is crucial for our purposes here is that their semantic representation, repeated in (3), reveals specific meaning components and structural information.

(3) BECOME **think.again** (*x*) **about something.be.in.mind.from.before** (*y*)

There are two participants (in a wide sense) taking part in the described event: *x* is the one who experiences the remember event, while *y* is the entity that is being remembered. The participants thus fill the semantic roles of 'experiencer' and 'topic'. The BECOME operator indicates a change of state that the experiencer undergoes, into a state where the experiencer 'thinks again' 'about' the topic, i.e. where the topic of the remembering is activated 'in the mind' of the experiencer again. Moreover, 'again' and 'from before' specify that the experiencer has already had the topic 'in their mind' before, i.e. that the topic is not being created by the experiencer at the time of remembering. The experiencer

and topic thus have been entertaining a relationship, and this relationship is a necessary prerequisite for the remember event.

All of these components and this structural information are adopted by Schalley and Kuhn (2007) in their representation of the remember event. In Van Valin and Wilkins' (1992) representation, a substantial amount of structural information is comprised implicitly in the predicate of the experiencer, **think.again** (x), the one of the topic, **something.be.in.mind.from.before** (y), and the **about** component (the predicate logic status of which is unclear). Schalley and Kuhn (2007), using the graphical Unified Eventity Representation (UER) framework (first introduced in Schalley 2004a), are able to represent these explicitly, using the graphical affordances of the UER framework. Figure 1 shows that the remember event includes two participants, x and y, the experiencer and the topic. While the experiencer undergoes a change of state into the cognitive perception subevent ('subcore state' in UER, further explained below), the topic maintains an already established (indicated by the '1') part–whole relationship ('meronomy') to the experiencer. Further specifications in Schalley and Kuhn's semantic representation, which are not incorporated in Van Valin and Wilkins' (1992) representation, include that the experiencer has to be a human (and in particular cannot be an event), that the topic is a mental entity (indicated by 'cognitive essence'), and that the part–whole relationship has a number of characterising features: the topic cannot be accessed directly from outside but is 'encapsulated' by the experiencer, the experiencer would still exist even if the relationship was removed ('removable'), and the topic, while required neither for the experiencer's existence ('mandatory') nor their completeness ('necessary'), cannot exist independently of the experiencer ('separable').
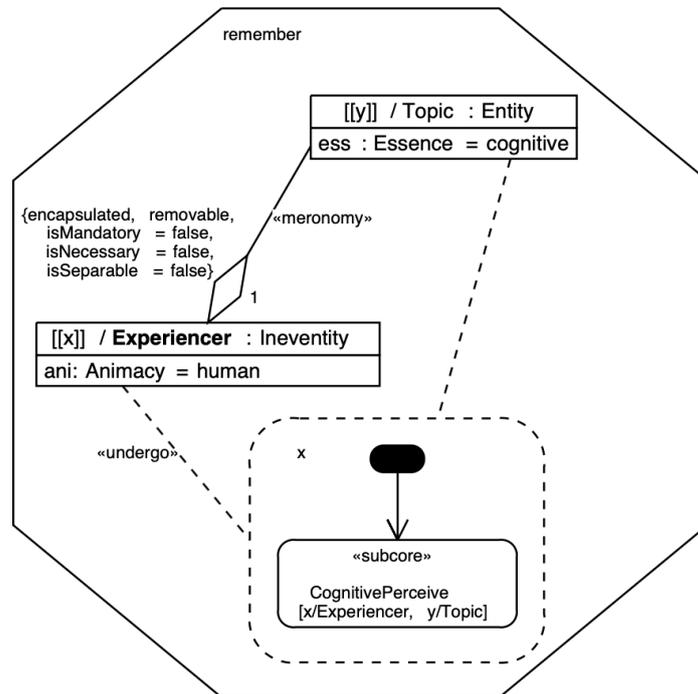
Figure 1: UER representation of the remember event
(reprinted with permission from Schalley & Kuhn 2007: 192)

Yet unclear is the nature of the cognitive perception state ('CognitivePerceive') which comes into effect as a result of the change of states the experiencer undergoes. The 'CognitivePerceive' state does not only maintain the same participants (in the same roles in the case at hand), with their part–whole relationship, but comprises additional specifications about the participants that only hold in the cognitive perception state and that are modelled in Figure 2. It can be interpreted as an embedded subevent, and this subevent, together with the part–whole relationship, corresponds to Van Valin and Wilkins' (1992) activity interpretation. At the centre of it is the 'Perceive' action state, and while the subevent holds, a further 'Access' relation between the participants exists, depicting that the experiencer can unilaterally access the topic, and that the access is 'immediate' and 'unimpeded' (Schalley and Kuhn 2007).
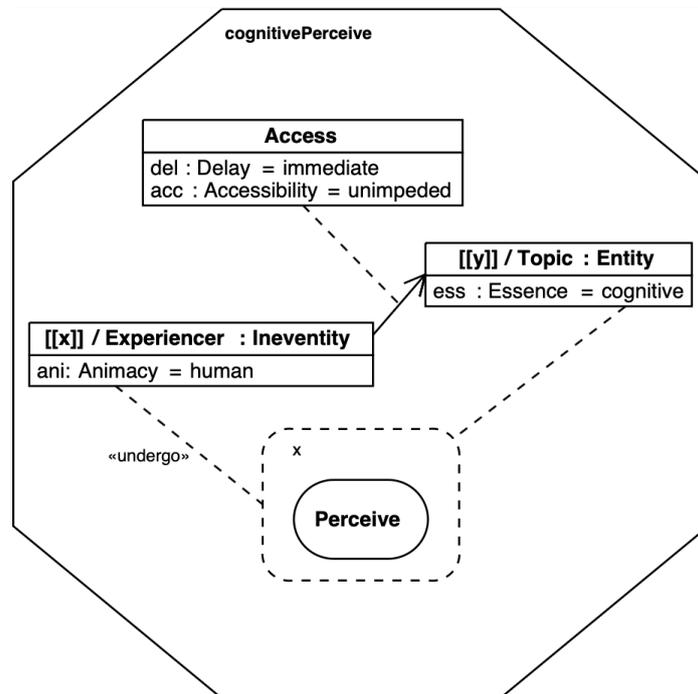
Figure 2: UER representation of the cognitive perception subevent
(reprinted with permission from Schalley & Kuhn 2007: 193)

Schalley and Kuhn (2007: 191) emphasise that an experiencer undergoing an action state does not imply that they are voluntarily acting: 'It merely classifies "Perceive" as an action, as the rolling of a stone would be classified as an action.' For imagining, the focus of the current study, this is also supported by neuropsychological and philosophical studies, which state 'that imagined future events can, like autobiographical memories, occur through an automatic and involuntary cognitive process' (Anderson, Dewhurst, & Nash 2012: 362; see also Berntsen & Jacobsen 2008; Sullivan-Bissett 2019).

It is difficult to further specify 'Perceive'. Stephenson (2010) offers a situation-semantic analysis of *remember* and *imagine*, which she regards as propositional attitude predicates. She argues for a distinct 'vivid' reading for both verbs, in which case 'Perceive' would imply the recalling or building up of a mental image by the experiencer, drawing on the sensory perspective of the person carrying out the remembered or

imagined event, i.e. 'from the inside' (Stephenson 2010: 150). While Stephenson refers merely to a specific reading (and does not claim vividness across the board), this aspect nevertheless warrants further investigation.

The UER framework employed here builds heavily on the standardised Unified Modeling Language (UML) (Object Management Group 2001) from computer science and was the first object-oriented approach introduced to linguistic semantics (Schalley 2004a). Corresponding to our cognitive system, the UER explicitly models entities, their characteristics, their relationships to other entities, and their behaviour as well as interactions with other entities. The UER features, as does the UML, a well-defined syntax and an explicit semantics. Like the UML, the UER is a graphical modelling language: structural information and different conceptual types are displayed using specified graphical elements, including relations and embeddings. For a detailed specification of the UER, see Schalley (2004a). As seen above, the UER allows us to be very explicit and structured in our semantic representations, for instance by providing mechanisms to represent relationships and subevents. The representation of the remember event in Figures 1 and 2 enables us to specifically discuss which aspects of imagining are different from remembering, and how they affect a semantic description of *imaginings*. That is, while the underlying cognitive processes appear to be very similar or the same according to the neuropsychological studies, and hence we can expect very similar conceptual models of remembering and imagining, there are clearly differences that this corpus-based study aims to illuminate. Furthermore, the study focuses on the noun *imaginings*, so while the results of the verbal semantic studies presented in this section form the basis for the upcoming analysis, further adjustments that take the word class difference into account are indispensable.

Data and Methods
The data underlying the analysis in this study are, as indicated above, drawn from the Corpus of Historical American English (COHA) (Davies, 2010–). COHA is the largest structured corpus of historical English and contains 400 mio. words in more than 100,000 texts, covering the period 1810–2009 (Davies 2012). It comprises written American English data and covers the genres of fiction (accounting for 51.1% of the corpus),

popular magazines (23.9%), newspapers (9.9% and no texts before the 1860s), and non-fiction books (15.1%). COHA has been lemmatised and tagged for part-of-speech (Davies 2012). It is therefore the best available data source for our purposes. I consider the lack of spoken data in COHA as of minor relevance to the semantic analysis of *imaginings*, as the word is more likely to occur in written contexts. To test this assumption, I also searched the Corpus of Contemporary American English (COCA) for *imaginings*. COCA has a comparable structure to COHA, and is a corpus of more than 1 billion words of American English (Davies 2008–). It comprises spoken data and also transcripts from TV and movie data (which studies have shown to constitute natural spoken/colloquial data) as well as written genres. While the spoken genres in COCA account for 25.6% of the overall corpus (257 mio. words), tokens of *imaginings* in these genres only constitute 5.9% of the tokens found in COCA overall (29/495). A focus on written data for this study is thus well motivated. Moreover, the choice of COHA can be further justified by the higher frequency of *imaginings*, as the word occurs around 1.42 times per 1 mio. words in COHA (576 tokens in total), but only about 0.49 times per 1 mio. words in COCA (495 tokens in total).

COHA was screened for occurrences of the plural noun *imaginings*. The singular noun *imagining* does occur in COHA, too; however, it is even rarer than *imaginings*, with only 0.08 tokens per 1 mio. words. An analysis of these 33 singular occurrences quickly showed that they are nominalisations of the activity verb *imagine* (based on its present participle form *imagining*). Thus, we can consider the singular noun as the product of a grammatical process, with a marginal semantic change, and I will hence not further discuss it, but focus exclusively on the plural form *imaginings*. This, in turn, is supported by major dictionaries featuring an entry for the plural noun *imaginings*, but not for the singular noun *imagining*, which is instead subsumed under the verb entry *imagine* (see, for instance, Collins 2020; LDOCE Online).

Frequencies of *imaginings* tokens across the decades and genres were established. Moreover, collocated adjectives (those directly preceding the target word) were collected, analysed for their frequencies, and assessed for their perceived evaluative nature (whether they were 'positive', 'negative', or 'neutral') and whether they were perceived as having a high grade of intensity or vividness (taking the lead from Stephenson 2010). For instance, *anxious* was judged as of high

negativity, and hence marked as both 'negative' and 'intense'. In cases where I was unsure about adjectives' evaluative polarity, I accessed the extensive contexts provided by COHA in order to support my assessment. A first glance at some pilot data had appeared to indicate a higher percentage of negative emotional adjectives being linked to *imaginings*. However, as I was the only one assessing the data, the results should be treated with some caution, as they represent my subjective intuition.

Furthermore, *and-* and *or-*coordinations which included the target word (such as *thoughts and imaginings*, *ideas or imaginings*, *imaginings and foreshadowings*, or *imaginings or mere conceptions*) were analysed. Coordinated nouns give clues as to the reference set of *imaginings*. As Nickles et al. (2007: 38) observe, coordinations indicate that the concepts underlying the coordinated nouns or noun phrases at most overlap, but that there is no subordination relationship between them (compare the oddity of *my mother and my relative*). A coordination also shows that the coordinated nouns 'are treated as being situated on the same level of generality (compare the oddity of *cats or kelpies*, which is due to *kelpies* being a more specific term than *cats*)' (Morrissey & Schalley 2017: 403). In addition, the concepts underlying coordinated nouns or noun phrases have a non-trivial superordinate concept (compare the oddity of *a walk and an integer*, Nickles et al. 2007: 38).

Finally, nominal genitives preceding the target word (e.g. *eternity* in *eternity's imaginings*) and prepositional phrases embedded in the target word's noun phrase (e.g. *of those parents* in *the imaginings of those parents*) were analysed for their additional contribution to the meaning specification. As we will see, both genitives and prepositional phrases provide more information about the entities that participate in the event described by *imaginings*.

I now turn to a presentation of the results of the corpus data analyses. These results then feed into the discussion of a lexical semantics for *imaginings*.

Results: What the Corpus Data Tell Us

The first observation is the very low frequency with which the word *imaginings* occurs in COHA (and, as discussed above, even more so in COCA). Cross-checking the frequencies of 'synonyms' as provided by thesauri, we can see in Table 1 that the overwhelming majority of the

'synonyms' is more frequent. This, however, does not hold for *visualizations*. For instance, *ideas* occurs 53.8 times more often than our target word, while *visualizations* occurs 57.6 times less often than *imaginings*.

Table 1: Absolute and normalised frequencies of *imaginings* and its 'synonyms' in COHA

	Tokens	**Frequency per 1 mio. words**
ideas	31012	76.34
dreams	17663	43.48
conceptions	2844	7.00
fantasies	1438	3.54
imaginings	**576**	**1.42**
visualizations	10	0.02

As illustrated in the normalised frequencies across decades in Figure 3, *imaginings* first occurs in the 1820s in COHA. Collins (2020) indicates earlier usage, already from the 1730s, with a slight rise in recorded usage in the first half of the 19th century. This is corroborated by the COHA data, which in addition show a spike in the 1830s. The usage of *imaginings* then slightly decreased over time. Yet, one has to be careful not to overinterpret the data, as due to the rarity of *imaginings*, combined with fluctuations in corpus size and genre composition across decades, generalisations are hard to come by. Given the much lower usage in COCA (0.49 times per 1 mio. words, for the period 1990–2019), it is safe to assume, though, that *imaginings* currently fills a 'niche' role.
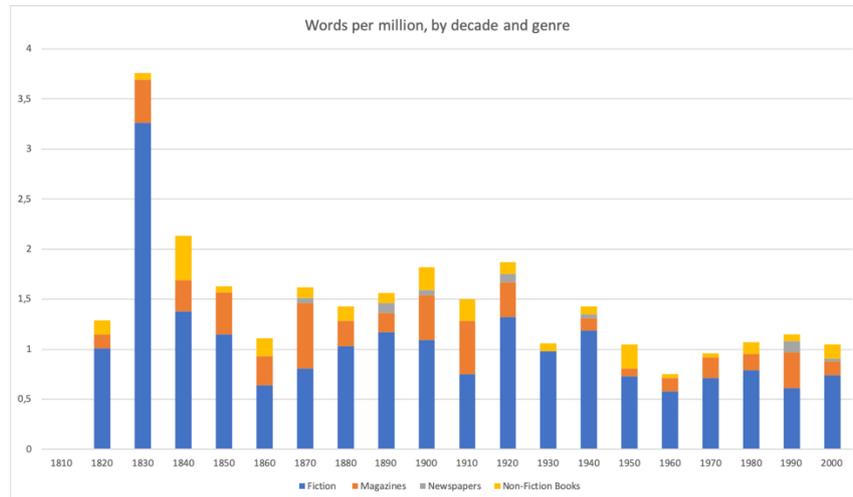
Figure 3: Normalised frequencies (words per million) of *imaginings* in COHA (Davies 2010–), by decade and genre

    While *imaginings* is overall rather marginal in the corpus, the highest number of tokens is found in the fiction genre, which accounts for more than two thirds of the tokens (69.9%), as shown in Figure 4. Newspapers have the lowest share of occurrences, with barely 1.9%. The number of tokens in the fiction genre is thus about 36% higher than a distribution in line with the ratio of the four genres would have predicted (with fiction comprising 69.9% of the *imaginings* tokens, while the genre accounts for merely 51.1% of the corpus).
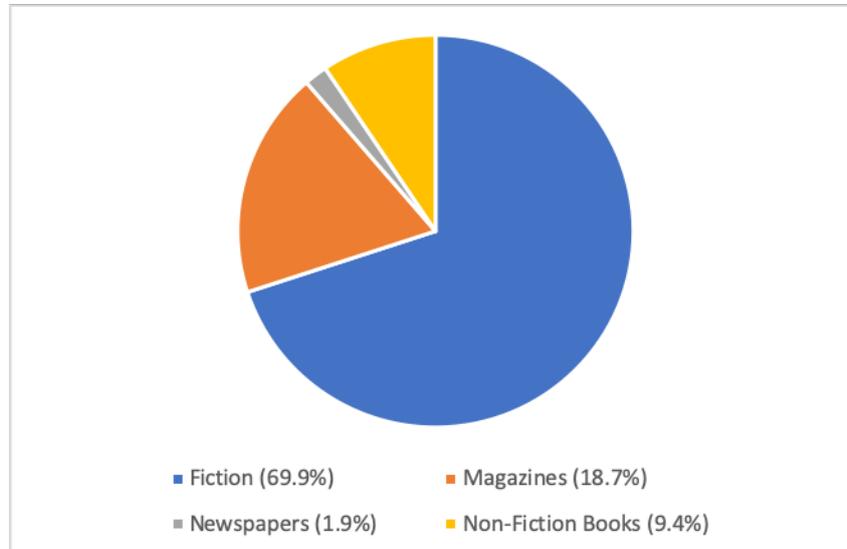
Figure 4: Distribution across the four genres of the COHA corpus, in percent

If one disregards fiction as the majority genre in the corpus and only considers the remaining three genres (see Table 2), the number of target word tokens in the non-fiction books genre is as expected, while tokens in the magazines genre are about 27.1% higher than their expected share, and tokens in the newspapers genre are about 68.3% lower than expected. Yet, as Granath and Wherrity (2014: 14, fn. 3) point out, there are no newspaper texts before the 1860s, and in the period 1860–1910 newspaper texts only account for about 5.7% of the corpus, so these results should be interpreted with caution.

Table 2: Frequencies of the genres magazines, newspapers, and non-fiction books in COHA (disregarding the fiction genre)

genre	# of target word tokens	% of corpus (without fiction genre)	distribution of tokens (without fiction genre)	difference (in %)
magazines	107	48.9%	62.2%	27.1%
newspapers	11	20.2%	6.4%	− 68.3%
non-fiction books	54	30.9%	31.4%	1.8%
total	172	100.0%	100.0%	–

We now move to an analysis of the kind of adjectives that directly modify the target word, to see which attributions are attached to *imaginings*. As presented in Table 3, 353 out of 576 tokens of *imaginings*, and hence 61.3%, are directly modified by a preceding adjective, indicating a very high percentage of cases in which the target noun is further specified by an attribution. The fiction and magazines genres have—while still very close to the average—the lowest percentages of adjective modifiers, while the non-fiction books genre is slightly above average. The only outlier is the newspapers genre with 81.8%. However, due to the small absolute number in this genre (11), this could be pure coincidence.

Table 3: Frequencies of collocated adjectives, by genre

	# of *imaginings* tokens overall	# of tokens modified by adjectives	% of tokens modified by adjectives
fiction	400	245	61.3%
magazines	107	65	60.7%
newspapers	11	9	81.8%
non-fiction books	54	34	63.0%
total	576	353	61.3%

Of the collocated adjective types, 94.1% are given in their positive form, followed by only 4.8% superlatives and 1.1% comparatives (see Table 4). Table 5 presents those collocated adjective types that occur more than once with *imaginings*, together with their frequencies.

Table 4: Frequencies of collocated adjectives, by word form

	# of types	% of all types	# of tokens	% of all tokens
positives	176	94.1%	321	90.9%
comparatives	2	1.1%	2	0.6%
superlatives	9	4.8%	30	8.5%
total	187	100.0%	353	100.0%

Table 5: Collocated adjectives types occurring more than once as modifiers of *imaginings*, and their frequencies

own	26	*false*	4	*abstract*	2	*horrid*	2
wild	19	*fanciful*	4	*crude*	2	*impure*	2
wildest	17	*lofty*	4	*early*	2	*miserable*	2
vain	10	*romantic*	4	*evil*	2	*morbid*	2
bright	8	*beautiful*	3	*exotic*	2	*mystic*	2
dark	8	*black*	3	*fair*	2	*new*	2
vague	7	*childish*	3	*fantastic*	2	*pleasant*	2
fond	6	*fearful*	3	*feverish*	2	*silly*	2
horrible	5	*gloomy*	3	*girlish*	2	*somber*	2
strange	5	*only*	3	*glorious*	2	*vast*	2
vivid	5	*rich*	3	*grotesque*	2	*weak*	2
darkest	4	*sad*	3	*happy*	2	*weird*	2
divine	4	*worst*	3	*high*	2		

Given this study's aims, the adjective lemmas' perceived evaluative nature and their grade of intensity or vividness were also assessed. Out of the 187 adjective types, 179 adjective lemmas were extracted and assessed. The data in Table 6 show that there are indeed substantially more negative (52.5%) than positive (34.1%) evaluations attributed to *imaginings*, although clearly all three categories ('negative', 'positive', 'neutral') are present in the data. Moreover, altogether a high percentage (86.6%) of all adjective lemmas were categorised as being evaluative (either negative or positive). Intensity or vividness has, however, only been established for 46.4% of all adjective lemmas. Yet, more than half of the negatively (53.2%) and positively (52.5%) evaluated adjective lemmas are also deemed of high intensity/vividness, while this applies to only 4.3% of the neutral adjective lemmas. (While intensive/vivid neutral adjective lemmas appear to be contradictory, the one occurring instance in the corpus is the compound *highest-coloured*, where the modifying superlative triggers the intensity assessment.) It can thus be concluded that evaluative attributive collocations are an essential element in the usage of *imaginings*, and that half of these evaluative attributions can even be considered as being close to the extremes on adjectival scales (e.g. *absurd* is positioned further towards the 'negative' extreme on a scale of 'oddness' than *weird*) or as depicting a heightened vividness. The use of the superlative adjectival types—*wildest*, *darkest*, *worst*, *best*, *direst*, *fondest*, *gloomiest*, *richest*, and *silliest*—naturally also moves the

attributions towards the end of the respective scales, and does so in a pronounced way.

Table 6: Collocated adjectives lemmas: evaluation and intensity assessments

	EVALUATION		INTENSITY/VIVIDNESS		
	# of lemmas	% of all lemmas	# of lemmas	% of intense	% of all lemmas
negative	94	52.5%	50	60.2%	53.2%
positive	61	34.1%	32	38.6%	52.5%
neutral	23	12.8%	1	1.2%	4.3%
unsure	1	0.6%	0	0%	0%
total	179	100%	83	100%	46.4%

Two brief concluding observations on the collocated adjectives are in order: The data set comprises opposing collocated adjective lemmas (e.g. *hectic* vs. *idle, best* vs. *worst, bright* vs. *dark, happy* vs. *sad*), and while around one fifth can be seen as based on physical or temporal properties (e.g. *black, bright, early, dark, wild*), about three times as many describe mental states or attributions that are of a subjective nature (e.g. *fearful, fond, gloomy, lordly, terrified*). A closer look shows that most of the physical/temporal attributions are used in a metaphorical way, resulting in them also referring to mental states or subjective attributions in the data (e.g. *dark* expressing evil, pessimistic, or gloomy feelings).

In the next step of the analysis, *and-* and *or*-coordinations with the target word in COHA were analysed. Overall, 77 coordinated noun tokens and 58 noun types were identified. Table 7 displays the ten noun types that are coordinated more than once with *imaginings* in the data set. Two of these (*dreams, ideas*) have been listed as 'synonyms' in Table 1 as well, and a further two of the five 'synonyms' from Table 1 occur in the list of coordinated nouns as well (*conceptions, fantasies*).

Table 7: Nouns coordinating more than once with *imaginings*, and their frequencies

thoughts	6	*desire/s*	2
dreams	5	*hopes*	2
fancies	4	*ideas*	2
acts	2	*longings*	2
day dreams	2	*words*	2

Overwhelmingly, count nouns coordinate in their plural form with *imaginings*, as Table 7 shows. *Desire* occurs once in the singular form (*and a desire to express the inexpressible*), and once in its plural form (*and desires which are not definitely expressed in their own minds*). The remaining six non-plural nouns—*admiration, art, cause (for wonder), confidence, fear* and *quality*—are used as uncountable nouns in their respective contexts (e.g. *and boundless confidence of fourteen*; *and fresh cause for wonder; and provocative pictorial quality inherent in a mind*). Coordination in general hence points to a conceptualisation of *imaginings* as referring to a set or sequence of entities.

Of the coordinated noun types, 84.5% (49/58) refer to mental entities (e.g. *beliefs, conceptions, faiths, passions, presentiments, reveries*), often directed towards the future (e.g. *aspirations, fantasies, forebodings, foreshadowings, strivings, yearnings*). Moreover, there is one example with a negation of *imaginings* embedded in a coordination: *terrors concrete and actual, happenings and not imaginings, things of the living flesh and of sweat and blood*. This example provides a further lead as to how one might delimit the nature and type of entity that is coded by *imaginings*, namely as an entity that is neither concrete nor actual, not of a physical nature, and not taking place in reality, i.e. that is non-veridical.

In the previous section, we hypothesised that collocating genitives and prepositional phrases provide more information on the entities that participate in the event described by *imaginings*. In the data, there are 22 genitives preceding *imaginings*. These were categorised semantically, and the results and the frequencies with which they occur are displayed in Table 8.

Table 8: Collocated genitive categories and their frequencies

Category	Frequency	Examples
proper names/titles	8	*Hetty's, Robert's, Mrs. Wapshot's; Senora's*
social role nouns	5	*writer's, authors', owner's, painter's*
general nouns (humans)	3	*child's, men's, woman's*
human body meronyms (parts)	2	*mind's, heart's*
time/space holonyms (wholes)	2	*eternity's, world's*
abstract nouns (emotions)	1	*love's*
kinship nouns	1	*son's*

While most categories (proper names/titles, social role nouns, general nouns for humans, and kinship nouns) directly refer to human experiencers, the human body meronyms indicate body parts related to mental entities and emotions, both of which have already been shown to be of relevance to *imaginings*. They can be seen as representing the experiencer as well. Outliers to genitives referring to a human experiencer are the abstract noun *love's* (from an 1869 poem) and the time/space holonyms *eternity's* (from a 1832 poem; *eternity* as whole to temporal subintervals) and *world's* (from a 1917 magazine text on poetry and imagination; *world* as whole to subspaces). In general, collocated genitives hence name the human experiencer participant but not the topic (which is in line with English genitives being more likely to code human possessors).

Prepositional phrases embedded in the target word's noun phrase code event participants as well (e.g. *of those parents* in *the imaginings of those parents*). All of the occurring 99 prepositional phrases are *of*-phrases, and they can be categorised for their contribution to the contextual meaning. Similar to genitives, some code experiencers. Yet,

they also—and to the largest extent (56.6%), see Table 9—provide contextual information about what the topic of *imaginings* is.

Table 9: Embedded propositional phrases, categorised by role of the PP noun phrase

Participant role	Frequency	%	Examples
topic	56	56.6%	*of a black bat hovering in the night; of unseen and ideal being; of faultless systems; of life and religion; of such a contrast; of evil*
experiencer	43	43.4%	*of the Urgermane; of our great-grandfathers; of a lonely gas station clerk; of the tyrant; of a feeble brain; of nations*

Discussion: A Lexical Semantics of Imaginings

The results garnered in the previous section feed into the discussion of the lexical semantics of *imaginings* in this section. In contrast to, e.g., Schalley and Kuhn (2007), I do not focus on different readings of the noun *imaginings*, as there is no clear evidence that this rare noun has distinct readings (and in line with this none are distinguished by dictionaries, see, e.g., Collins 2020; LDOCE Online). The semantic differences between in-context meanings appear to lie more in which pieces of information are specified or modified by the linguistic context rather than in differences in the semantic structure (such as the number of participants, or the relations that exist or do not exist between participants). That is, we are not dealing with structural differences that would cause different readings to be conceptualised by speakers. Instead, this section develops a lexical semantics for *imaginings*, drawing on both the semantic representation of *remember* from the background section and the results obtained from the corpus analysis in order to substantiate and support the argumentation. I discuss the underlying dynamic structure of *imagine* (as the 'sister' event to *remember* and the base event of *imaginings*), followed by a closer look at the word class difference

and the plurality of the target noun. Interspersed in the discussion, the main components of the modelling and their characteristics are examined based on the corpus results, giving rise to a clear picture of the semantics of *imaginings*.

'All acts of remembering entail calling something up in the mind' (Van Valin & Wilkins 1992: 511). In the case of *imagine*, Van Valin and Wilkins' (1992) activity interpretation (without the BECOME operator) is prevalent, not the achievement interpretation. The focus is on perceiving or visualising mental entities instead, or in Stephenson's (2010) terms, on the mental image built up by the experiencer 'from the inside'. In terms of the UER modelling, the change of state, i.e. the transition into the target state (the 'CognitivePerceive' subcore state in the case of *remember*, see Figure 1), is thus discarded, leaving us with the non-subcore action state 'Perceive'. In other words, the embedding of the subevent is not needed any more, and the 'Access' relation holds throughout the main event (and not only the subevent, as in the case of *remember*).

The experiencer and topic participants remain, as we have seen in the discussion of collocated genitives and prepositional phrases in the previous section, which have highlighted exactly these two roles. However, no previous relationship between the experiencer and the topic has to exist as a prerequisite (as is the case for *remember*). Given that the phase preceding the 'Perceive' action state is not modelled any more, though, and that the relationship has to hold throughout the imagine event, no change to the model takes effect: for the purposes of the semantic representation the part–whole relationship is maintained. While it may be tempting to posit that the mental entity (i.e. the topic) is created during the imagine event, this is not, however, always the case, as one can imagine the same mental entities over and over again. In such cases, the difference between the semantics of *remember* and *imagine* does not lie in the (non-)existence of a part–whole relationship (which exists in both cases), but in the different nature of the mental entities, as discussed below.

So far, the discussion has concentrated on the 'sister' event to *remember*, *imagine*. However, the study's focus is not on the event itself, but on the noun *imaginings*. *Imaginings* is derived from the stem *imagin-* by adding the present participle morpheme *-ing*, and the addition of the plural morpheme *-s* to the resulting nominalisation. The present

participle nominalisation in the singular form appears to refer to the imagine event itself, as touched upon in the corpus analysis in the previous section. That is, the present participle nominalisation highlights the activity or mental process taking place, in contrast to other nominalisation morphemes such as *-ation*. The grammatical change from verb to noun allows further modifications, for instance by adjectives, as in the COHA example in (4).

(4)   *Reflective thinking, creative or constructive imagining and thinking, are thus both individual in origin, and universal in aim*.
      [Non-fiction; Leighton 1937, *Social Philosophies in Conflict*]

The further addition of the plural morpheme determines that the target noun is a count noun that represents a set or sequence of mental experiences made by the human experiencer, and that the underlying concept directly competes with other set-like mental entities as coded by *ideas* and *images* (see the list of coordinated nouns in Table 7 for more examples). The plural noun thus emphasises experiences beyond one single imagination, and highlights in connection with the *-ing* nominaliser the dynamic character of mental experiences 'from the inside', thereby indicating (emotional) intensity and vividness. As we have seen in the corpus results, this intensity and vividness is well supported by the adjectival modification in the data. Not only are over 60% of the *imaginings* tokens directly modified by a preceding adjective, but over 85% of the adjective lemmas were categorised as emotionally laden (positively or, to a larger extent, negatively). Over half of these again indicated intensity or vividness, in most cases through the inherent semantics of the adjective lemmas, which were used in their positive form rather than in the comparative or superlative. That positive adjective forms prevail in nearly 95% of the cases could be motivated by the fact that the adjectives are already quite close to the extremes of the adjectival scales (as discussed in the previous section). It could also play a role, though, that comparatives and superlatives require a comparison benchmark and hence the topic would need to be assessable by the commenting speaker (writer, author, etc.). This, in turn, might be difficult, as the mental topic entity is 'encapsulated' and hence not easily accessible to anyone but the experiencer, complicating comparisons.

Generally, while the existence of (emotional) intensity and vividness appears to be connected to the semantics of *imaginings*, the direction of the intensity does not appear to be predetermined. Negative, positive, and neutral adjectives occur as modifiers, as do opposing adjectives, as demonstrated in the previous section. The lexical semantics of *imaginings* in itself is thus neutral. Yet, it is possible that *imaginings* carries negative semantic prosody, given that it collocates more frequently with negative adjectival modifications. This, however, would need to be investigated more in-depth in an empirical study.

The results of the corpus analysis also showed that most attributions refer to mental states or subjective attributions, which corroborates the observation that *imaginings* refers to a set or sequence of mental entities. What we have observed in a previous paper is also confirmed in the current study, namely that 'attributions tend to highlight or reinforce specifications that are already part of the semantics, or add evaluations of existing specifications' (Morrissey & Schalley 2017: 404, fn. 14), in contrast to modifiers which change or override semantic specifications. The adjectival modifications thus specifically fulfil the purpose of reinforcing and evaluating the intensity and vividness of *imaginings*, and authors might choose the noun *imaginings* over its 'synonyms' specifically because of this (emotional) intensity and vividness.

I will now turn to the participants of *imaginings*: topic and experiencer. The range of coordinated nouns—overwhelmingly in their plural form—provides information on the nature of the topic. Indeed, the results from the corpus analysis confirm what has already been suggested by the semantic representation of *remember*: the topic is of a mental nature ('cognitive essence'), as nearly 85% of the coordinated nouns refer to mental entities. Often, they direct the attention to the future, as underscored by, e.g. *aspirations*, *fantasies*, *forebodings*, and *foreshadowings*. There is only one example in the corpus—reprinted in (5)—where a coordinated noun is directed towards the past.

(5) *I turned my eyes frequently from the ring to the vast stretches of the arena, serried and stippled with faces. I have said that it stirred all sorts of incoherent memories and imaginings of classic scenes.*
[Magazines; Fullerton Gerould 1926, *'Ringside Seats'*]

The concepts underlying the coordinate nouns *memories* and *imaginings*, as discussed in the background section, must have a non-trivial superordinate concept (Nickles et al. 2007: 38). The question then is what this superordinate concept is in (5). Does *imaginings* contribute a future orientation to complement the past-oriented *memories*, such that the overall coordination points to a superordinate concept that covers the whole timeline, from the past to the future? Or does *imaginings* highlight a different aspect than temporality in (5)? It appears that the one negation example (see (6) and the discussion in the results section) provides a clue here, as it delimits the topic as not referring to anything that happened in reality, and hence to the topic's non-veridicality.

(6) *[…]—these were terrors concrete and actual, happenings and not imaginings, things of the living flesh and of sweat and blood.*
[Fiction; London 1906, *Before Adam*]

That is, while memories are often seen as being veridical (representing events that happened in the past), imaginings are not. In (5), *imaginings* appears to highlight this aspect of non-veridicality, while remaining unspecified temporally. Over and above the non-veridicality of *imaginings*, (6) points to the topic as something that is exclusively happening within the experiencer ('from the inside' in Stephenson's 2010 terms), as a product of one's mind and sensation.

Further general characteristics of the topic can be inferred from the coordinated nouns, which are situated at the same level of generality, as pointed out above. Taking, for instance, the most often occurring coordinated noun—*thoughts*, see (7)—allows one to ascertain that the topic of *imaginings* does not refer to conscious controllable mental processes. This can thus be attributed as a further semantic specification to the topic of *imaginings*.

(7) *If we accept the hypothesis that the individual does not independently create his thoughts and imaginings, but simply perceives what is presented from an inner source […]*
[Non-fiction; Streatfeild 1959, *A Study of Two Worlds: Persophone*]

Moving on to the second participant, the experiencer of *imaginings*, the genitives point to human experiencers, as do the embedded prepositional phrases not referring to the topic participant. In both cases, the usage of body parts as *pars pro toto* for human experiencers appears to increase the level of involuntariness, as illustrated in (8) and (9) and already discussed in the context of the psychoneurological studies. (10) is a further example showing the involuntary nature of *imaginings*, in which the experiencer can get *lost*.

(8) *His glance shall haunt the heart's imaginings.*
      [Fiction; Fairfield 1832, *The Last Night of Pompeii. A Poem: And Lays and Legends*]

(9) *Or was all pride and folly, the disordered imaginings of a feverish brain?*
      [Fiction; Poyer 2003, *Fire on the Waters: A Novel of the Civil War at Sea*]

(10) *GEORGINA looks after him for a moment, considerably agitated, then sits back dreamily, lost in her imaginings.*
      [Fiction; Rice 1945, *Dream Girl*]

As involuntariness is a possibility but not necessity—see (11) for an example in which voluntariness plays a role—the semantic specification of the experiencer is not further delimited. The experiencer thus does not appear to take any more semantic specifications over and above that they are by default human.

(11) *But you'll have to change the pattern of your imaginings. There is not the slightest possibility that this one will ever happen.*
      [Fiction; Livingston Hill 1975, *Bright Arrows*]

In summary, the lexical semantics for *imaginings* can now be captured in the following way:

1. As a starting point, we take the semantic representation for *remember* (Schalley & Kuhn 2007); the changes needed to represent its 'sister' event coded by *imagine* are:

    a. *Imagine* denotes an activity, not an achievement such as *remember*. That is, the transition or change of state is discarded, and only the target state of that transition remains.

    b. The subcore state turns into a standard action state, as the 'Access' relation holds throughout the imagine activity. There is no embedded subevent any more.

    c. There is no requirement of a previous relationship between the two event participants, experiencer and topic, any longer. The relationship may or may not exist before the action state is entered. However, the phase preceding that action state is not modelled any more (there is no transition source state any longer), so for the purposes of the semantic representation the part–whole relationship is maintained as it was for *remember*.

2. The semantic specification of the experiencer as a human remains the same; there are no further specifications. (Attested outliers in the data are expected to represent in-context ad hoc changes of the lexical meaning and are hence not further considered here.)

3. The semantic specification of the topic is further refined. The topic is a mental entity that does not refer to anything that happened in reality. The topic is fully a product of the experiencer's mind and sensation (hence reinforcing the need to model a part–whole relation as outlined in 1c.); however, it is not generally a product of conscious controllable mental processes.

4. The nominalisation based on the present participle and plural form of the resulting noun *imaginings* emphasises experiences beyond one single imagination. *Imaginings* thus refers to a set or sequence of mental experiences. The plural nominalisation thus 'packages' a set or sequence of *imagine* events, creating one whole that can be referred to by speakers.

5. This set or sequence of mental experiences as a whole is understood as displaying (emotional) intensity and vividness. The type and direction of the intensity and vividness is, however, not specified. Modifiers such as adjectives are used to provide further specifications in specific linguistic contexts, as demonstrated by the corpus examples.

6. The set or sequence of mental experiences as a whole is by default understood as being directed towards the future. This, however, might be an effect of the non-veridicality as described in point 3 rather than a strict semantic specification.

Conclusion

In this study, I have discussed the lexical semantics of *imaginings*, aiming to identify the meaning components and to discern their compositional structure. As there is, to my knowledge, no previous work on the decompositional semantics of nominalisations such as *imaginings*, the study had to break new ground. I have tried to do so by basing my analysis on a previous decompositional analysis of *imagine*'s 'sister', *remember* (Schalley & Kuhn 2007), and on occurrences of *imaginings* in the COHA corpus. As underlying theoretical framework, I used the object-oriented graphical Unified Eventity Representation (UER) (Schalley 2004a). The UER was developed to specifically represent verbal semantics (such as the semantics of *remember* and *imagine*) and, in contrast to other semantic representation frameworks, it provides mechanisms for specifying characteristics of event participants and the relationships they entertain with one another. This has proved crucial in the analysis.

Nevertheless, the semantic description presented herein still has a number of shortcomings that warrant further work. First of all, no graphical representation format for the semantic representation of nouns such as *imaginings* is available to date. The UER would have to be extended to capture nominalisations, but this is far beyond what this study could achieve. I have thus intentionally refrained from offering a graphical semantic representation for *imaginings* along the lines of Figures 1 and 2. Secondly, I could not analyse the exact nature of the topic participant. While a number of delimitations based on the corpus data have been brought forth, there are bound to be more. This would require a more in-depth lexical semantic analysis of both the coordinated nouns and the topic-specifying prepositional phrases. Thirdly, the characterisation of intensity and vividness would benefit from a more extensive investigation. Currently, a number of aspects appear to still be conflated, so a more in-depth decompositional analysis would be required. And fourthly, the nature of the 'Perceive' action state is not fully elucidated at this point. What exactly happens during an

imagination? Should this be broken down further from a linguistic semantic perspective, or can 'Perceive' already be considered a 'semantic prime' (as suggested in Schalley & Kuhn 2007)? Should psychoneurological studies be drawn on more to answer questions such as this one?

There are further methodological delimitations, too. While the semantic interpretation of *imaginings* has been based on a representative corpus and hence on naturally occurring language, I have carried out the analyses of the linguistic contexts of *imaginings* largely intuitively. They may thus not be as reliable as analyses where actual speaker evidence had been collected and analysed as objectively as possible. Moreover, a broader data base could have been beneficial. However, I hope that this paper will nonetheless instigate future research. To date, studies of mental entities are heavily underrepresented in linguistic semantics, possibly due to their elusive nature and the above-discussed fact that mental entities cannot be directly observed and are not objectively accessible. Yet, collaborations of psychologists, neuroscientists, and linguistic semanticists could garner promising results.

This leaves me with some final thoughts on the meaning of *past imaginings*, the title of this collection of studies. This collocation does not occur in the corpora I have consulted for this study, and I have also not delved into the semantics of *past*, so the ensuing comments need to be treated with caution. Yet, it appears as if there are two main readings to *past imaginings*, based on syntactic ambiguity that is most likely disambiguated in different stress patterns: In the first case—with secondary stress on *past* and primary stress on *imaginings*—*past* functions as preposition and head of the prepositional phrase *past imaginings*, and hence the underlying meaning could be paraphrased as 'beyond imaginings'. In the second case—with primary stress on *past*— *past* functions as an adjective and modifier in the noun phrase *past imaginings*. In that case, *imaginings* is the head, and the underlying meaning could be paraphrased as 'imaginings of the past'. The question is though, what do each of them mean, given what we now know about the semantics of *imaginings*?

In the first case, the head of the phrase is *past*. So, in what sense could one go 'beyond' imaginings? We have seen that the main meaning components of *imaginings* are the 'Perceive' state, experiencer and topic, and their relationships. 'Beyond' could in principle apply changes to any

of these components: 'Perceive' could be replaced by another action state, such as for instance 'Predict' (would that turn the experiencer into an oracle? or a fortune-teller?). The experiencer could be replaced by a non-human (do dogs experience imaginings? or even stones?), and the topic could be replaced by a physical entity (is tactile perception 'beyond imaginings'?). In a similar vein, the part–whole relationship could be specified as one where the topic is not removable any more, i.e. the experiencer would cease to exist without the topic as a part. What becomes evident very quickly and forcefully here is the question how many changes the concept underlying *imaginings* can tolerate such that speakers would still accept a description of 'beyond imaginings'. My prediction would be that only changes to one of the meaning components at a time, and only changes that (a) are cognitively closely related and (b) honour the structural composition and characteristics of the other meaning components, would be acceptable. Of course, this is pure speculation, but nonetheless poses the interesting question how far the meaning of a lexical item can be stretched through its use in context.

In the second case, the head of the phrase is *imaginings*. So, in what sense could there be 'imaginings' in the past? Would these be merely memories, based on our discussion above? The answer is clearly in the negative. The specification of *imaginings* in this case does not change. The topic is still not real, and there is still a default directedness towards the future. Instead, *past imaginings* in this reading requires time travel— mental time travel. The point on the timeline at which what was cognitively perceived lay in the future and was not real is now in the past, and with *past imaginings*, we have to mentally travel back to that temporal point of reference. *Past imaginings* thus makes us remember imaginings that were experienced in the past, and thus beautifully combines both of the events discussed in this paper, in that imagine events are embedded in a remember event.

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