Iconicity and the Grammar - Lexis Interface

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Abstract
This study examines the proposal in Cognitive Grammar (Langacker 1987, Talmy 2000) that grammatical classes are iconically motivated. The discussion follows a case-study to test this hypothesis. Using found data, we examine the productivity of a range of grammatical classes across Dutch, English, and German. The study bases its analysis on the lexical concept of precipitation. The perceptual and universal nature of such a concept should be a best-case scenario for iconic motivation of grammatical classes. However, despite this, the test-case produces mixed results. Although the hypothesis is not disproved, we reveal how it cannot, alone, explain the vagaries of lexical – class grammaticality.

1.   Preamble

Iconic explanations for lexico-grammatical classes have a venerable history. From the early approaches of Paul (1909), Haas (1916:155), and Otto (1919:234) that investigated the interaction of conceptually motivated grammatical meaning and lexical meaning (*Beziehungsbedeutung* and *begriffliche Bedeutung*) to the more recent burgeoning of functional research, exemplified by Givón (1979), Haiman (1980), Hopper & Thompson (1984, 1985), Wierzbicka (1986, 1995), and Croft (1991), iconic motivation for grammatical structure has become an important part of linguistics. The conceptual approach to iconic motivation is represented by Cognitive Linguistics. This approach differs essentially because its position on linguistic motivation bridges the traditional empiricist-mentalist divide. However, as Geeraerts (1985) stresses, this theoretical position is not without its problems. Real-world motivation, or isomorphic iconicity, and culturally determined structures interact in a complex, often competing way. Cognitive Grammar (Langacker 1987, Talmy 2000) places the weight on perceptual real-world iconicity where Cognitive Semantics (Fillmore 1985, Lakoff 1987) emphasises culturally constructed-world motivation.

Cognitive Linguistics, as a symbolic theory of language, holds that all form is motivated, be that with reference to the perceived world or not. Our study focuses on a specific kind of motivation, what Radden & Panther (2004:27) call "experiential motivation", also termed isomorphic iconicity (Haiman 1980, cf. also Kleiber 1993 and Francis 1998). Such isomorphic motivation is often distinguished from diagrammatic iconicity. The first type of motivation breaks the *signans-signatum* dichotomy of the European Structuralist project; the second breaks the form-meaning distinction of the American Generativist tradition. Many within the research community have sought to link culturally motivated structures to the perceptually motivated structure of Cognitive Grammar (Johnson 1987, Górska 1994, 2001, 2002, Krzeszowski 1997, and Hampe 2005a, 2005b, Hampe & Schönefeld 2003, 2005, Hampe & Grady 2006). Our study will demonstrate the difficulty and complexity of this endeavour.

Cognitive Grammar proposes a set of iconic theories that explain the structure of grammatical class. Using found-data and taking a basic perceptual concept, we design a simple litmus test to ascertain the analytical power of such theories. We examine the grammatical class - lexical variation of the concept, 'rain-snow', in three closely related languages, English, Dutch, and German. Although the results do not discredit the theories of Cognitive Grammar, they show conclusively that such motivation interacts in a complex way with synchronically 'arbitrary' effects on grammatical class variation. We begin with a short discussion of the theoretical context of the problem and a description of the iconic theories postulated to resolve it. We then move to test their analytical accuracy.

2.   Cognitive Linguistics and the *vox significat rem mediantibus conceptibus*

2.1.   *Empiricism, Mentalism, Isomorphism, and Linguistic Relativity*

Cognitive Linguistics, as a theoretical paradigm, is based on complex and sometimes contradictory assumptions. If we take Lakoff (1987), Johnson (1987), and Langacker (1987) as seminal works, then the theoretical tenets clearly bridge the traditional mentalist-empiricist division. At a theoretical level, this is contradictory, for we propose that the world is understood through the medium of our conceptual system; that since semiotic value does not exist in the *Lebenswelt*, we ascribe our *Weltansicht* to events and things *à la* Humboldt-Weisberger / Sapir-Whorf. Yet, at

the same, Cognitive Linguistics bases its analyses on referential information, that is, the perception of the universal *Lebenswelt*. Without going into the details of the various views on linguistic relativity, let us consider two short quotes of "strong relativity" that would seem perfectly acceptable to most cognitive linguists.

> The difference in languages is not a difference in sounds and signs but rather a difference which implies a different conception of the world … Language is the expression of form in which the individual carries the world within [him/herself] … words are the landmarks that enable [one] to orientate oneself amid the multitude of phenomena. Humboldt (1969[1820]: 58, 162).

> The background linguistic system (in other words the grammar) of each language is not merely a reproducing instrument for voicing ideas … [w]e dissect nature along lines laid down by our native languages. The categories and types we isolate from the world of phenomena … [have] to be organized by our minds and this means largely by the linguistic systems in our minds. Whorf (1995[1940]: 212-213).

It is such ideas that are fundamental to many of the theories of Cognitive Linguistics. Lakoff (1987: 304-309) stresses that different conceptualisations are a natural part of human cognition just as Langacker and Talmy's work assumes that languages and grammatical forms construe the world differently. Yet universals of perception and cognition are basic to their descriptive apparatuses.

This flaunting of the tenets of philosophical enquiry has not gone unnoticed and, within the paradigm, attempts have been made to resolve this theoretical ambiguity. For example, Geeraerts (1985, 1993a) and Kleiber (1990, 1993, 1994) both seek to resolve this inherent contradiction. Yet Cognitive Linguistics still holds a decidedly 'vague' position on the interaction of real-world iconic and cultural-world arbitrary structures in language. Lakoff (1997) summarises this ambivalence:

> Le cerveau humain opère par projections neuronales qui vont des aires corporelles les plus voisines des inputs primaires - tel que le cortex visuel primaire, le cortex sensori-moteur, etc. - aux aires corticales supérieures qui sont plus éloignées de ces inputs. Bref, d'un point de vue neuronal, il y a des parties du cerveau qui sont plus proches des inputs corporels et d'autres plus éloignées. Ce fait corréspond à un autre fait … les concepts abstraits sont conceptualisés par le biais de concepts plus proches de l'expérience coporelle, c'est-à-dire, l'expérience sensible, de l'expérience motrice etc. Lakoff (1997: 165).

Johnson (1987) takes the same position, although couched in more philosophical parlance:

> In short, we ought to reject the false dichotomy according to which there are two opposite and incompatible options: (a) Either there must be absolute, fixed value-neutral standards of rationality and knowledge, or else (b) we collapse into an "anything goes" relativism in which there are no standards whatsoever. Johnson (1987: 196).

Here we see how Cognitive Linguistics places itself squarely between the traditions. In terms of isomorphism and relativity, Lakoff argues that just as some neural structures are tied to perception and others to abstract reason, thus functions language, some concepts being tied iconically to perception while others are free to construe the world in whatever way. However, he says ultimately, the foundations are the shared and universal input from the *Lebenswelt*, which entails that arbitrary structure is never entirely arbitrary. Johnson equally stresses that language is both *motivated* by our perception of the *Lebenswelt* and our perception of the *Lebenswelt* is *construed* by our language. He also stresses that the lowest common denominator, the shared perceptual experience, is what keeps our language construal from being entirely arbitrary. In a sense, Cognitive Linguistics argues for mentalist empiricism or perhaps a relative iconicity. Despite the theoretically tenuous stand here, the position is intuitively attractive. Culture and language influence our perception of the world, but the world and our tools of perception are more or less universal, and thus our languages / cultures are arbitrary but based on the same input. Although such a circular argument may not fit the received wisdom, it is probably the best description of reality. Indeed, this 'middle way', historically, does have its proponents, for example Bühler (1990[1934]), who are so oft forgotten in the cognitive literature. This said, using such a theoretically awkward assumption as the foundation of complex theory of language structure is far from self-evident.

2.2   *Cognitive Grammar, Cognitive Semantics, and Lexicology*

Cognitive Linguistics proposes a symbolic model of language that entails a direct relation between form and meaning. In light of this, the lexicon may not be distinguished from morpho-syntax. However, obviously syntagmatic and paradigmatic structures differ in how they function and thus differ in the analytical tools necessary for their description. Cognitive Grammar (Langacker 1987, Talmy

2000) focuses on the syntagmatic parameter and is concerned primarily with perceptually motivated structure, where Cognitive Semantics (Fauconnier 1984, Fillmore 1985, 2003, Lakoff 1986, 1987) is concerned more with the paradigmatic parameter and culturally motivated structure. The theory of image schemata is, to date, the most robust theory for linking the types of structure and is employed in a wide range of studies.

Cognitive Semantics represents a heterogeneous research community covering Metaphor and Metonymy studies, Frame Semantics, Mental Space studies as well as a wide range of work in the study of categorisation, polysemy, and lexical variation. Questions of isomorphism are central to much of this work. In metaphor studies, Kövecses (2005) concentrates on distinguishing between "real-world" and "culturally-based" metaphoric structures, where for the study of semantic variation and polysemy, Vandeloise (1984), Cuyckens (1993), Dąbrowska (1996), and Tabakowska (2003) *inter alia* employ spatial representations. Moreover, Sandra & Rice (1995), Cuyckens & al. (1997), and Sandra & Cuyckens (1999) are developing procedures to ascertain the psychological reality of perceptually-based meaning. However, the study of paradigmatic lexical structure *per se* has largely developed independently of any iconic theory of semantic structure. Such lexical research in Cognitive Linguistics includes Lehrer (1982, 1990), Dirven & al. (1982), Lewandowska-Tomaszczyk (1996), Geeraerts (1993b, 1997, 2000, 2006, & al. 1994), Schmid (1993, 2000), Fischer (2000), Grondelaers & Geeraerts (2003), Frohning (2005), and Glynn (2004a, 2004b, 2006a, 2006b). We can summarise these approaches to the lexicon as onomasiological since they examine the lexical structure of concepts rather than the conceptual structure of lexemes, typical of polysemy study.

One of the basic problems in onomasiological research is the interaction between the syntagmatic and paradigmatic dimensions of language (cf. Glynn 2002, 2004c). This problem has a long history and has been dealt with from various perspectives. We will focus on one issue, that of grammatical class. We seek to be able to explain the conceptual and linguistic relationship between *some snow / to snow / snowy* and to explain variations in such class-lexeme pairing. Cognitive Grammar offers certain iconic theories that explain the conceptual structure of these grammatical classes. We wish to see if these theories can account for such variation.

3. Isomorphic Scanning and Configurational Structure of Grammatical class

In Cognitive Grammar, whether isomorphic or diagrammatic, all form is motivated. For the description of grammatical class, Langacker (1987: 189) states that "grammatical categories such as noun, verb, adverb, and adjective are semantically definable," a view shared by Talmy (2000a: 33). More precisely, Langacker (1987: 141-146) draws on a theory from the cognitive sciences referred to as "perceptual scanning" and combines this with his idea of a "class-schema", which is his conceptual equivalent of a grammatical class. A cognitive scanning process is theorised to account for our ability to identify, in the perceptual field, similar and dissimilar items. There are two types of scanning, namely sequential and summary scanning. One process is implied when an individual examines salient elements in a visual plane one by one and when this 'scan' is complete, assembles the elements into a *Gestalt*. Langacker argues that this type of scanning leads to nominal representations in language. On the other hand, if the speaker does not form this *Gestalt* of the perceived referent, then the conceptual structure is one of a sequential scan, which is the basis of verbal structures. Langacker (1987: 259, 1990: 78-82, 1991: 25-30) holds that this cognitive process is the basis of both spatial and temporal perception and processing.

An example of this theory's application is Langacker's (1987: 203ff, 1990: 69ff, 1991: 23ff) study on count-mass distinctions. The application of the theory of perceptual scanning to grammatical categories such as "countable" and "non-countable" is straightforward. The different qualities of 'life-world' matter leads to different semantic structures encoded in the nominal classes. Thus, an instantiation of a count noun is a result of scanning matter with a quality of identifiable 'things', where the scanning of amorphous matter is instantiated by mass nouns. Obviously, it is only our perception of the matter in question that effects the profiling since we have no direct access to the 'life-world', and this perception is based in a conceptual system and cultural logic that, in part, dictates what qualities of a matter are salient and thus profiled.

For the reader familiar with the formalisms of Cognitive Grammar, we can adapt Langacker's (1991: 28) diagram used to explain the difference between count and mass nouns. In figure 1, the dotted lines represent the process of instantiation;

the box on the left, the quality of the designatum; the box on the right, the profile instantiated by the grammatical class.
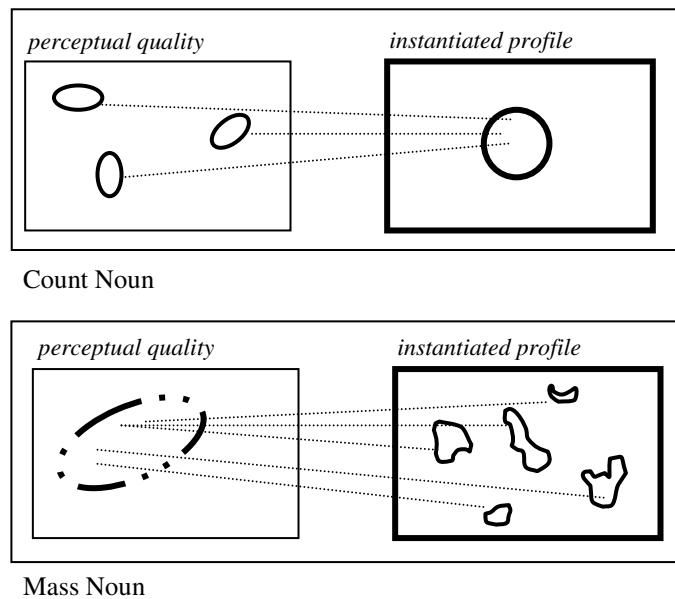

Count Noun

Mass Noun

Figure 1. Langacker's Distinction of Count-Mass Qualities and Class Profiles

Talmy's (2000a: chapters 1 & 2) theory is similar to that of Langacker's, yet more fine-grained. He proposes a theory of "configurational structures" to capture the iconic motivation of grammatical semantics. The distinctions of 'quality' are but one part of this configurational structure and unlike Langacker's two-way distinction, Talmy's (2000a: 43-68) treatment offers three overlapping distinctions that may combine to give various semantic "configurations" that hold valid for both verbal and nominal profiling. The distinctions are: discrete versus continuous; bounded versus unbounded; and multiplex versus uniplex. The simplest way to explain the proposal is by example. Figure 2 is an adaptation of Talmy's (2000a: 59) depiction of the configurational structure.

The schematic depictions in Figure 2 are designed to represent the perceptual distinctions of quality for events and matter. It is important to note that these configurational structures do not represent grammatical structure, but possible types

of conceptual profiling. They vary from language to language and in a given language may be encoded by lexical or grammatical structures that range from words and Aktionsart to grammatical case and syntactic semantics. For example, using a quantifier such as *some* or *a bottle of* for [wine]-*wine* are lexical choices for encoding this configuration of quality, where the grammatical structures would include *he considered the wine* versus *he considered the wines*. In this way, for the domain of space, 'amorphous matter' can be construed as 'bounded objects' and for the domain of time, 'activity' can be reified as an 'act'.

Discreet   Continuous

Bounded

forest / to moult   *sea / to empty*

Amorphous

furniture / to breath   *water / to sleep*
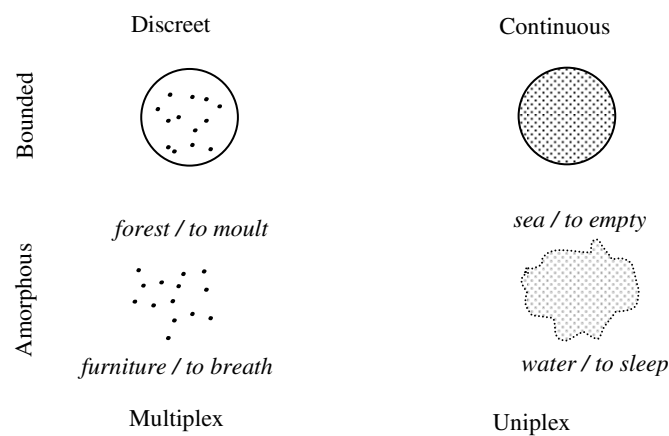
Multiplex   Uniplex

Figure 2. Talmy's Configurational Structures of Quality

   Talmy posits a range of configurational structures that seek to capture possible perceptually based distinctions, others include Degree of Extension for percepts such as points through to unbounded matter / events, as well as Patterns of Distribution, and Axiality. We do not need to cover the full range of proposed configurational structures, the above description of the 'quality' of matter / events suffices to explain, mutatis mutandis, the other configurations.

   We must make one last theoretical note. One of the fundamental hypotheses of Cognitive Linguistics is that of entrenchment. Put simply, entrenchment is the hypothesis that allows for standard and non-standard language in a linguistic model that has no *langue-parole* or *ergon-energeia* distinctions. The principal is also sometimes referred to as routinisation or degree of form-function correlation. It stipulates that the more often a speaker successfully uses or interprets a form-

meaning pair, the more embedded in language knowledge that pair becomes. It is thus that we may dismantle constructs such as 'ideal speaker', competence, and *langue-ergon*: a language is simply the sum of its utterances. It follows from this that generalisations about a language may be made through frequency data. As our investigation uses found-data, we can employ this theory of entrenchment to distinguish language use that is part of the language proper from that which is the creative use of that language system.

4. Class Variation and Cognitive Grammar: A case study.

Both Langacker's and Talmy's theories are isomorphic hypotheses that in explanatory discussion seem reasonable. However, can they explain the variation in acceptability across the various classes that are typical for any given lexeme? To test this, we will consider a simple concept, RAIN-SNOW, in English, Dutch, and German. The discussion will serve to demonstrate just how complex a problem grammatical class is and show how cognitive approaches to lexicology may not solely rely on descriptions of conceptual structure in their analyses. This concept offers a best case scenario for Cognitive Grammar since not only do we have a clear *tertium comparationis*, the physical reality of the precipitation type, any *Lebenswelt* motivation for the lexical semantics should be clear given the basic and perceptual nature of the designatum.

The procedure is straightforward. For each lexical root, the full range of theoretically possible classes and inflections is established using standard morphological rules. Following this, the productivity of each of these "possible" forms is checked. In other words, the relative frequency of lexeme-class pairs is established in order to distinguish impossible pairings from marginal usages and then from the main of the entrenched vocabulary. We use the Internet as a corpus since it characterised by a large amount of creative language use. If the iconic theories of Cognitive Grammar are to hold, they should be able to explain simple variations in the resulting paradigm.

In order to find the frequency of a given class-lexeme pair, we must combine the results of the various inflections. In English and Dutch, for the nominal and adjectival classes, there is little morphological variation. In Dutch, there are two adjectival variants, stem + suffix + 0 and stem + suffix + *e*. However, in German, due to the case system, there are theoretically 18 variants for each of the four

relevant adjectival forms, as well as 8 nominal forms and 33 verbal forms. We only consider such inflectional complexity when it might affect the relative frequency of class-lexeme pairs. To represent the more complex combinatory possibilities, we also consider two compounds and one verbal prefix.

Table 1 presents the results for the possible class profiling of nine lexical concepts in the three languages. An asterisk indicates that no semantically relevant examples were found for a given lexeme-class pair. Non-related senses proved to be common in the data. The hash-sign (#) indicates clear cases of polysemy. However, the occurrence of proper names, such as 'Haily' or song titles and so forth, means that for low frequencies, careful sorting is necessary. When there were less than 50 'clean' results, the examples were verified with informants. Two question marks indicate that a very small number (<20) of well-formed examples were found after careful sorting and a single question mark indicates that the form-meaning pair exists but that it its productivity is low (<200). Items that take no asterisk or question mark are clear examples of well-entrenched form-meaning pairs with many thousands, even millions of "hits". These examples are unsorted since no degree of noise would affect their relative frequency.

If possible, table 1 go somewhere near here.

Firstly, let us consider what seems to be a reasonably regular constraint. The concept [hail] is encoded by a simple cognate lexeme across the three languages. The item is fully productive in the nominal and verbal classes. Through compounding with 'stone' or 'grain' (*korrel, Korn)*, a count noun may profile the individual parts of hail. In the verbal class, the item is productive across the entire Tense-Mood-Aspect system just as the count-noun profile, from the compounds, *fall / val / fall* and *storm/ storm/ sturm*, is productive. The *be-* and *ver-* verbal prefixes are not productive, but this is not irregular since these prefixes are highly idiomatic and subject to various semantic constraints. The irregularity in the profiling of [hail] is found in the adjectival classes. With some very rare exceptions, this concept is not profiled adjectively even though it is grammatically possible and 'correct' to do so. Informants in all three languages said that they thought the adjectival form to be possible. The corpus results show that, although possible, it is clearly not entrenched. Let us compare the frequency of occurrence for [hail] + adj. with the other items.

In table 2, the predicative forms were retrieved with the following queries: "it's/ its / is/ was rainy" and the equivalents in Dutch and German with the corresponding subject-verb inversions. Although this only retrieves examples where there is no quantifier between the copula and the adjective, it should suffice for comparative purposes. In order to isolate attributive forms, two approaches are used. Firstly, the collocations adj. + *weather / we(d)er/ wetter* and *day/ dag/ Tag* are searched. Secondly, for Dutch and German, inflected forms are searched, since inflected forms are normally restricted to the attributive class. However, this misses large numbers of attributive examples since obviously not all attributive forms are inflected.

Table *2 Relative Frequencies of Rain-Snow Adjectives*

English	rainy	snowy	drizzly	haily	sleety
Pred. Adj. (copula + adj.)	47,108	13,517	1,682	2	7
Attrib. Adj. (adj. + *day*)	5,257,000	323,680	32,569	8	281

Dutch	regenachtig	sneeuwachtig	miezerig	hagelig	nevelig
Pred. Adj. (copula + adj.)	1,575	5	676	0	742
Attrib. Adj. (adj. *-e*)	139,180	2,788	41,850	1	12,300

German	regenreich	schneereich	nieselig	hagelig	neb(e)lig
Pred. Adj. (copula + adj.)	793	455	257	0	5,251
Attrib. Adj. (adj. + *-e / -en / -em*)	48,960	55,739	1,070	4	123,173

These figures are far from precise measurements and are a combination of Google queries on both the Usenet archives and World Wide Web. However, the differences in frequency are substantial enough that more precise data seems unnecessary. Immediately, two frequencies are significant.

Firstly, we notice that the Dutch predicative form for snow and the English predicative form for sleet are significantly unproductive. In all three languages, variations on the adjectival forms were searched. In Dutch, for snowy, there are

three possibilities, *sneeuwig*, *sneeuwerig*, and *sneeuwachtig*. This does not affect the results, since the combined search results for the three forms revealed only 11 examples of the predicative versus 3,548 examples for the attributive. We will return to this point below.

Secondly, the consistently low productivity of the hail adjectival forms is clearly significant. As stated above, this form is 'grammatically possible', but unproductive. In other words, it seems that neither the predictive or attributive adjectival profiling of this concept is entrenched in these languages. In order to demonstrate that this profiling, although grammatical, lies outside the grammar proper, let us consider some examples of adjectival [hail].

(1)   a.   A terrible windy, snowy, rainy, haily day.
                    <www.dcnyhistory.org/signordiary.html>

          b.   If it had been a rainy, haily day, which it
                    wasn't...<blather.newdream.net/d/drip.html>

(2)   a.   het is mooi weer en daarmee uit. Dat geëmmer over te warm, te koud, te nat, te mistig, te hagelig, te hitsig of te sneeuwig.
                    <www.imb-mjuzik.net/nuchter_weer.htm>
                    'It's nice weather and that's it. That whining about too hot, too cold, to wet, too haily, too clammy, too snowy.'

          b.   jo hee, en hoe is t nou daar, in t verre zandvoort? ook hagelig, regenachtig en onwerig?
                    <aarsjes.mygb.nl/gb.php?id=aarsjes&page=22>
                    'Hi there and how's it there now in far off Zandvoort? Also haily, rainy, and thundery?'

(3)   a.   Wir sind um eine Erfahrung reicher und hatten einen grandiosen Segeltag. Zwischendurch kalt und hagelig, aber gut.
                    <www.klassefun.de/regatta/ger/10h2001.htm>
                    'We gained a new expereince and had a grandiose sail-day. In-between cold and haily, but good.'

b. In Graben-Neudorf wars zuallererst mal stürmisch-regnerisch-hagelig und später dann auch sonnig-windig-wolkig. <www.bsv-zwickau.de/gb/guestbook.php?show=true&page=10>
'In Graben-Neudorf it was first off stormy-rainy-haily and then after also sunny-windy-cloudy.'

c. ... hier ist das Wetter winterlich, stürmisch, regnerisch und hagelig. <cook5.chefkoch.de/forum/2,50,115913/forum.html>
'...here the weather is wintery, stormy, rainy and haily.'

These examples are typical of this class-lexeme combination. It is noteworthy that the overriding majority of these few occurrences were examples of "lists". Often, the speaker seems to be describing the weather using an adjectival profile but wishes to add the [hail] concept to the list of descriptive terms. Instead of starting a new clause to accommodate a more typical [hail] profiling (nominal or verbal for instance), the speaker simply uses the grammatical possibility of combining the adjectival class and the lexical concept. To support this observation, in only once instance, did the item *haily*, or its cognates, start the list. This is shown in example (2b). Informants consider this example to be quite creative: the speaker seems to be 'playing with language' and it is clear from the greater context that the speaker is employing humour. Note also that the item *onwerig* 'thundery' is quite unusual in Dutch. In creative language use, all native speakers are able process such form-meaning pairs, and with ease since the pairing is a simple instantiation, involving no analogical reasoning. However, for whatever reasons, such pairing is not entrenched. It is clear from the infrequency of this lexical-class pair and from the kind of examples that do exist, that these pairs lie outside the grammar proper of the language. Can we explain this apparent anomaly with iconic motivation or is this an example of arbitrary linguistic structure?

First of all, it is interesting to note that there is a difference in the results between the predicative and attributive forms of the [hail] + ADJ. Although neither could be argued to represent entrenched parts of the grammar, the attributive form was "more possible" or "more likely" than the predicative form. This is a clue to the iconic motivation for this irregularity in lexeme - class pairing. We can describe the meaning of the adjectival class as stative. That is to say, the attributived profiles a relationship between a characteristic and a nominal and predicative adjective describes the state-of-affairs. The latter would imaginably imply greater stativeness

in the class-schema. The meteorological phenomenon of hail, at least in our North European climes, is rarely durative. That is to say, hail either gives way quickly to sun in a summer storm, or to sleet or snow in colder weather. This would explain the lack of productivity but also why it was more common, although still highly infrequent, to use *haily* in the attributive form.

We can, thus, assume that perceptually based image-schematic definitions of the classes, in the tradition of Langacker and Talmy, explain this irregularity. For instance, Talmy's (2000a: 61) configuration structure eloquently explains this kind of temporal organisation. The configuration entitled Degree of Extension is probably the most apt in this circumstance: in simple terms, the constraint on the adjectival [hail] is a result of the perceived 'Aktionsart' of the real-world phenomenon of hail.

This line or argumentation is supported by the fact that in German, the item *graupelig*, which is the adjectival form of *Graupel* "snow-pellets", reveals similar constraints on productivity. The bare adjectival forms *graupelig* and *graupelartig* revealed only 302 and 52 respectively. When queries were made on the 17 inflected forms, these numbers still only rose to 408 and 57. Although these numbers do not bring into question the grammaticality of the lexeme-class pairing, that contrast clearly when compared with those of a concept that lends itself more readily to a stative class-schema, such as *Nebel* 'mist, fog'. This lexical category, *neblig* and *nebelig*, revealed 252,173 and 70,787 examples respectively; figures that even exceed the results for [rain] and [snow].

The behaviour of the meteorological phenomenon of graupel in the *Lebenswelt* is similar to that of hail. This type of snow (at least in the English *Weltansicht* since in Dutch it is characterised as a type of hail, *stofhagel* 'dust hail') is relatively rare and intuitively, it would be almost as non-durative as hail. Of course, without meteorological evidence this is mere speculation, but for our purposes, it is safe to say that the perceived similarity in Aktionsart to [hail] and the infrequency of its adjectival profiling further correlates with our explanation for hail.

Let us return now, to the other variation in frequency that we saw in table 2. In English, the class profiling of [sleet] and in Dutch the profiling of [snow] reveal irregularities with the rest of the paradigm that defy any iconic explanation. For these two lexemes, the predicative adjectival reading is highly constrained. Furthermore, just as for the [hail] examples, the few Dutch 'snowy' and the English *sleety* examples that were found are not 'good' examples in that they often represent listing or "language play".

(4) a.   Here in Shrewsbury it's sleety.
          <www.livejournal.com/users/__kali__/2004/01/28/>

    b.   If it's sleety in eastern Iowa but not in central Iowa...
          <www.dailykos.com/story/2003/11/9/163326/266>

    c.   It's cold, it's wet, it's sleety - I wouldn't send a flag out on a day
          like... <www.smoe.org/lists/fegmaniax/2002/v11.n196>

    d.   Quel surprise. Well, given that it's HOT and SUNNY while in the
          UK it's SLEETY and RAINY <home.clara.net/ianlloyd/
          holiday/sydney2002/15_camp-cove.htm>

    e.   Fuck me it's gone really dark and it's sleety snowing fucking ace
          and dark!!!
          <www.funjunkie.co.uk/forums/viewposts.cfm?forumid=2&thread
          =438&s=16&order=AS>

    f.   Now it's sleety-snowing and we've just had a clap of thunder. I
          think the weather has gone mad.
          <www.livejournal.com/users/ilovemycamera/2004/01/28/>

    g.   It's actually snowing here - we'll almost, it's sleety-snowy.". "Is
          that the official weather term?"
          <ils.merwolf.com/academy/fanfic/g/gebirch_harvest2.html>

These examples represent, more or less, the entire range of found usages of
predicative *sleety*. Of these examples, only the first two seem to be simple instances
of 'normal' language usage. Examples (4c) - (4d) are listing examples, where (4e) -
(4g) represent creative language use, where the speaker is trying to describe the
weather but cannot find a lexeme that suitably describes the weather conditions in
question. Note that in example (4g), the speaker even passes a humorous comment
on the use of the term.
    The same phenomena are present for the Dutch predicative *sneeuwig* and
sneeuwachtig. Consider the examples below:

(5)   a.   in oosterijk was het koud bewolkt nattig en sneeuwig en hier het zelfde behalve de
sneeuw.<www.kanslosers.nl/forum/post.asp?method=ReplyQuote &REPLY_ID=797&TOPIC_ID=26&FORUM_ID=11>
'In Oosterijk it was cold, clouded, wettish and snowy and here the same but for the snow.'

      b.   Net vandaag, nu het ijskoud en sneeuwig is.
<bufs.blogspot.com/2005_01_01_bufs_archive.html>
'Just now, it's icy-cold and snowy.'

      c.   Terwijl het hier heel koud en sneeuwachtig is, droom ik nog...
<huizen.daxis.nl/zander/miskulin-rapp.htm>
'While it's cold and snowy here, I still dream...'

      d.   het in de eerste week van maart koud en sneeuwachtig was?
www.vvzwammerdam.nl/Clubblad/Nummer2_Maart2005.pdf
'It was cold and snowy in the first week of March?'

      e.   ja zoals Je ziet het is sneeuwachtig.
<www.onh.zolties.nl/modules.php?name=Forums&file=viewtopic &p=4731&sid=0ff08fab09c74b3c4d91ffa2>
'Yeah like you see it is snowy'

Since these two lexeme-class pairs are almost never used, despite their grammaticality, and when they are used, we see the same listing phenomenon and creative language use that we saw for [hail], we can safely assume that the predicative adjectival profiling for these concepts is not entrenched.

Why is this the case? It would seem that the concept of [sleet] is very close to the concepts of [snow] and [rain] since, 'in reality' it is a mix of the two. This is why in many languages *sleet* is a hyponym for *snow* and indeed, in English it could be paraphrased as "icy rain". Both German and Dutch have a lexical gap for this concept. Dutch and Frisian use the compound nouns *sneeuwregen* and *snierein* 'snow-rain' to mean *sleet* and in High German the compounds *Eisregen* 'ice-rain' and *Schneeregen* 'snow-rain' are available while Low German uses the compounds *Fieselsnee* 'yucky-snow' and *Pieselsnee* 'tinkle-snow'. This might indicate that closely related languages see *sleet* as a type of snow because perceptually this is not

a salient phenomenon. This line or argument would link the lack of perceptual salience to low productivity in the language-culture system generally, resulting in a limited range of entrenched class profilings. In other words, in our *Weltansicht*, or "world-view", the real sleet of the *Lebenswelt*, or "real-world", is not particularly salient, and thus is less productive across the various grammatical classes.

However, the lacuna in the other Wessic languages seems to be due to the fact that *sleet* is a Nordic borrowing, with semantically identical cognates in Icelandic, Danish, and Norwegian. Moreover, the frequency of *sleet* in other classes demonstrates that, at least for speakers of English, this is a salient referent. Why then are the concepts [snow] and [rain] productive in all grammatical class profilings, the relational, nominal, attributive, and predicative adjectival, but *sleet* cause problems?

Could this be an example of arbitrary grammar induced by etymological flukes, phonological constraint, or are there referentially motivated reasons for this behaviour? Similarly, what explanation could we find for snowy in Dutch? Snow obviously falls like rain and falls in the same manner in Britain and Germany, it is durative in its *Lebenswelt* behaviour, phonologically the item poses no problem, and it is productive in the attributive profiling. So what iconic explanation could we possibly find to resolve this anomaly? A Langacker-Talmy-style analysis based on the perceptually determined different semantic values of grammatical classes offers no clues here.

These final two anomalies demonstrate that iconic explanations may not alone explain lexical structure. These examples are particularly pertinent because unlike for the many other types of irregularities on class-lexeme combinations, where foreignness or phonological constraint may be evoked, these examples would seem to fit the arbitrary grammar basket, and for a concept that is clearly based in our perceptual-experiential understanding of the world.

The survey of class-lexeme combinations presented in table 2 contains many such anomalies as well as interesting correlations between class and frequency and deserves further investigation. However, by selecting these two instances, the iconically motivated adjectival [hail] constraint and the 'arbitrary' predicative [snow] and [sleet] constraint, we have adequately demonstrated both the power and limitation of iconic motivation in the semantics of grammatical class.

## 5.	Conclusion

This simple study shows the complex nature of lexical - grammatical class pairing. It tested the hypothesis that iconic motivation is the basis of grammatical class structure. Although our findings offer examples where an iconic definition aids linguistic investigation, other examples demonstrate that this motivation is not the sole factor involved and that such conceptual descriptions of the classes cannot predict grammatical acceptability. In this, our findings parallel those of Francis (1998) in her critique of the functionalist proposals for iconic motivation of grammatical category.

Langacker (1990: 59) is cautious on claiming too strong a stand on iconic motivation: "I do not hold that all grammatical classes are strictly definable in notional terms". Moreover, both Lakoff (1987: 346, 493) and Langacker (1987), in their seminal works, argue that *predictability* is a matter of degree and that *motivation* is relative and based on a combination of factors. It is for these reasons that we chose to consider a 'best-case-scenario' for the proposal that grammatical class maybe defined in iconic terms. Although the definition is not found to be false, its analytical power must be questioned if it cannot account for such basic examples of linguistic irregularity. Givón (1994:56) succinctly summarises the issue: "syntax is a composite device in which more iconic - cognitively transparent - elements combine with more symbolic - cognitively arbitrary - ones, to yield a complex structure." Although the Structuralist era of linguistics was over-zealous in its "discovery" of arbitrariness, let us now not make the same mistake by searching too long for ubiquitous motivation. By bridging the symbolic-iconic divide, Cognitive Linguistics acknowledges the existence of both arbitrary and motivated language structure, learning how they interact is the challenge that we face.

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Table 1 *Lexico-grammatical Class Variation for Rain-Snow*

	[rain]	[snow]	[drizzle]	[heavy mist]	[mist]	[fog]	[hail]	[sleet]	[graupel]
English									
noun	rain	snow	drizzle	mizzle	mist	fog	hail	sleet	graupel
verb	rain	snow	drizzle	mizzle	mist	??fog	hail	sleet	graupel
-*y* PA	it's rainy	snowy	drizzly	mizzly	misty	foggy	*haily	??sleety	*graupely
-*y* AA	rainy day	snowy	drizzly	mizzly	misty	foggy	??haily	sleety	?graupely
-*ish* PA	??rainish	??snowish	?drizzl(e)ish	*mizzlish	mistish	*fogish	*hailish	?sleetish	*graupelish
-*ish* AA	rainish	snowish	?drizzl(e)ish	*mizzlish	mistish	*fogish	*hailish	sleetish	??graupelish
-*yish* PA	?rainyish	??snowyish	??drizzlyish	*mizzlyish	??mistyish	?foggyish	*hailyish	*sleetyish	*graupelyish
-*yish* AA	rainyish	*snowyish	??drizzlyish	*mizzlyish	??mistyish	?foggyish	*hailyish	*sleetyish	*graupelyish
be + verb	??berained	besnowed	bedrizzled	*bemizzled	bemist/ed	befogged	*behailed	*besleeted	*begraupeled
N+STORM	rainstorm	snowstorm	??drizzlestorm	??mizzlestorm	*miststorm	*fogstorm	hailstorm	sleetstorm	*graupelstorm
N+FALL	rainfall	snowfall	*drizzlefall	*mizzlefall	??mistfall	?fogfall	hailfall	sleetfall	*graupelfall
Dutch									
noun	regen	sneeuw	*miezer / motregen/ druilregen	stofregen	nevel	mist	hagel	sneeuwregen, natte/ smeltende sneeuw	stofhagel
verb	regenen	sneeuwen	miezeren/ motregenen/ druilen/ druilregenen	stofregenen	nevelen	*misten	hagelen	?sneeuwregenen	stofhagelen
-*ig* PA	?regenig	?sneeuwig	miezerig	-	nevelig	mistig (#)	??hagelig	-	-
-*ig* AA	?regenig	sneeuwig	miezerig	-	nevelig	mistig	??hagelig	-	-
-*erig* PA	*regenerig	sneeuwerig	*miezererig	-	*nevelerig	*misterig	*hagelerig	-	-
-*erig* AA	*regenerig	sneeuwerig	*miezererig	-	*nevelerig	??misterig	*hagelerig	-	-
-*artig* PA	regenachtig	*sneeuwachtig	*miezer(en)achtig	-	nevelachtig	?mistachtig	*hagelachtig	-	-
-*artig* AA	regenachtig	sneeuwachtig	*miezer(en)achtig	-	nevelachtig	?mistachtig	??hagelachtig	-	-
be + verb	?beregend	besneeuwd	*bemiezerd	*bestofregend	#/?beneveld	??bemist	*behageld	*besneeuwregend	*bestofhageld
N+STORM	regenstorm	sneeuwstorm	*motregenstorm	*stofregenstorm	*nevelstorm	*miststorm	hagelstorm	*sneeuwregenstorm	*stofhagelstorm
N+FALL	regenval	sneeuwval	*motregenval	*stofregenval	*nevelval	*mistval	hagelval	*sneeuwregenval	*stofhagelval
German									
noun	Regen	Schnee	Niesel	-	Nebel	-	Hagel	Schneeregen Eisregen	Graupel/ -regen/ -schauer/
verb	regnen	schneien	nieseln	-	nebeln	-	hageln	schneeregnen eisregnen	graupeln/ *-regnen/ *-schaueren
-*artig* PA	*regenartig	??schneeartig	*nieselartig	-	#nebelartig	-	*hagelartig	-	??graupelartig
-*artig* AA	??regenartig	??schneeartig	??nieselartig	-	#nebelartig	-	??hagelartig	-	?graupelartig
-*ig* PA	*regenig	??schneeig	nieselig	-	neb(e)lig	-	*hagelig	-	?graupelig
-*ig* AA	*regenig	schneeig	nieselig	-	neb(e)lig	-	?hagelig	-	graupelig
-*risch* PA	?regenerisch	*schneerisch	*nieselrisch	-	*nebelrisch	-	*hagelrisch	-	*graupelrisch
-*risch* AA	regenerisch	??schneerisch	*nieselrisch	-	*nebelrisch	-	*hagelrisch	-	*graupelrisch
-*reich* PA	regenreich	schneereich	*nieselreich	-	#/?nebelreich	-	*hagelreich	-	*graupelreich
-*reich* AA	regenreich	schneereich	*nieselreich	-	#/?nebelreich	-	*hagelreich	-	*graupelreich
V er+verb	#/?verregnen	verschneien	vernieseln	-	#vernebeln	-	#verhageln	*vereis/schneer	??vergraupeln
N+STORM	Regensturm,	Schneesturm	??Nieselsturm	-	*Nebelsturm	-	Hagelsturm	Schneeregensturm ??Eisregensturm	Graupelsturm
N+FALL	Regenfall	Schneefall	*Nieselfall	-	Nebelfall	-	Hagelfall	Schneeregenfall ??Eisregenfall	Graupelfall