The convergent evolution of radial constructions: French and English deictics and existentials

BENJAMIN K. BERGEN and MADELAINE C. PLAUCHÉ*

Abstract

English deictic and existential there-*constructions have been analyzed as constituting a single radial category of form–meaning pairings, related through motivated links, such as metaphor (Lakoff 1987). By comparison, existentials and deictic demonstratives in French make use of two distinct radial categories. The current study analyzes the varied senses of French deictic demonstratives (*voilà *'there is' and* voici *'here is') and the existential (*il y a *'there is'). We argue that the syntactic behavior of each of their senses is best explained by the semantic and pragmatic function of that sense, in combination with constraints imposed by its relation to other senses. A cross-linguistic comparison of the deictic demonstrative and existential constructions in French and English supports this claim: despite the different historical origins of these forms in the two languages, they display a strikingly similar array of uses and formal constraints. The parallel evolution of deictics and existentials in these two languages is interpreted as a case of convergent evolution of linguistic items, much like convergent evolution in biological species.*

Keywords: French; radial categories; constructions; deictics; existentials.

1. Introduction

This article is a study of the varied forms and meanings of French deictic demonstrative constructions (Diessel 1999) that use *voilà* 'there is' and *voici* 'here is', as well as of the French existential *il y a* 'there is' construction:

(1) a. *Voilà/Voici les clés que tu cherchais.*
       'There/Here are the keys you were looking for.'

b.   *Il y a un chien dans la cuisine.*
     'There's a dog in the kitchen.'

French deictic demonstratives and existentials superficially appear to differ radically from their English equivalents. For example, while French uses entirely separate forms to express deixis and existence (i.e., *voilà* 'there is [deictic]' and *il y a* 'there is [existential]'), English has a single lexical form, *there*, in a radial category that includes both meanings (Lakoff 1987). In this article, we argue that despite different historical origins, yielding surface differences, French and English deictic and existential constructions display convergent evolution.

1.1.   *Constructional polysemy in cognitive linguistics*

Studies grouped together under the rubric of cognitive linguistics ask a variety of questions about the mind and language. Many center on aspects of the following question:

How is the formal patterning of language a product of language use and of properties of the human cognitive system?

Two unique strands of research addressing this question have emerged, conscripting different sorts of data and different analysis tools.

The first strand has concentrated on words displaying *polysemy*; that is, words with multiple, related meanings. Related senses can be connected through any of a number of ubiquitous conceptual mechanisms, including metaphor (Lakoff and Johnson 1980), metonymy (Lakoff and Johnson 1980), blending (Fauconnier and Turner 2002), and constructional grounding (Johnson 1998). Work on polysemy has focused primarily on closed-class items, especially prepositions, like *over* (Brugman 1981), and classifiers, like Dyirbal *balan* (Lakoff 1987).

A second strand of research has sought out explanations for morphosyntactic patterning in the semantic correlates of this patterning. For example, Goldberg's (1995) work on argument-structure constructions provides evidence that the meanings of constructions, such as the Caused-Motion construction, place constraints on their use. Langacker's work (e.g., Langacker 1991) provides evidence that at various levels of linguistic structure, such as part of speech and agreement, meaning plays a central role in linguistic patterning.

A particular set of linguistic constructions, such as English *there* (Lakoff 1987) and *way* (Goldberg 1995) constructions, are relevant to both

strands of research. Not only do these constructions display multiple, related meanings, but they additionally exhibit different morphosyntactic arrangements for each of these senses. Such constructions simultaneously raise the issues of how their senses are related and why the different senses display divergent form characteristics.

The current study aims first to document major senses of a particular set of such polysemous linguistic constructions, using evidence from the meaning and form differences among those senses. The results show that the form differences among the senses of each construction are a product of the extension mechanisms themselves, in combination with the expressive requirements of the domains to which senses are extended. We support this claim through a comparative study of constructional polysemy across languages, providing cross-linguistic evidence on deictic and existential constructions, focusing on a comparison of English and French.

1.2. *Roadmap*

In this article, we address both the cognitive and the functional motivations for syntactic patterning and the polysemy structure of a set of constructions in French that we will call *voilà*, *voici*, and *il y a* constructions, exemplified in (1), above.

The central uses of the French deictic demonstratives *voilà* 'there is' and *voici* 'here is' have morphosyntactic characteristics that are not predictable on purely syntactic grounds. We demonstrate in section 2 that the function of the central senses of *voilà* and *voici* constrains their morphosyntactic behavior. In section 3, we analyze extensions in the radial constructions *voilà* and *voici*. The results show that the morphosyntax of each extension is functionally constrained.

A comparison of French and English deictic demonstratives and existentials in section 4 shows that similar mechanisms yield extensions of the radial category of *there*-constructions in English. This provides evidence that expressive requirements of the domains of application, in combination with extension mechanisms, conspire to constrain the range of extensions of polysemous linguistic constructions.

Finally, section 5 is dedicated to a comparison of the phenomenon of *convergent evolution* in biological systems with the results obtained from the current study. It is argued there that just as convergent biological evolution provides a window onto environmental factors that shape the evolutionary paths of living beings, so the convergent evolution of linguistic units in different languages can help us to understand the environmental pressures (in this case, function and cognitive requirements) that shape linguistic form.

2.   Functional constraints on the central deictic

Traditional accounts of *voilà* and *voici* constructions aim to classify these forms either in terms of existing parts of speech ("syntactic" categorization) or on the basis of their discourse function ("pragmatic" categorization). They have been syntactically classified as prepositions (Girault-Duvivier 1851), adverbs (Brunot and Bruneau 1969), and more convincingly, verbs (Moignet 1969; Bouchard 1988). *Voilà* and *voici* have been pragmatically labeled as presentatives (Grenoble and Riley 1996; Lambrecht 1981), interjections (Nyrop 1914), and factives (Damourette and Pichon 1927).

In this section, it will become clear that it is impossible to simply treat *voilà* and *voici* as belonging to a particular existing part of speech. Their behavior is most like verbs, but even in their central senses (without even considering their polysemy) they display numerous morphosyntactic restrictions. For example, unlike other French verbs, they lack a subject. They show indicative-like pronominalization, but they lack tense and aspect marking. Recognizing these aberrations, Moignet (1969), who classifies *voilà* and *voici* as verbs, is forced to submit that *voici* and *voilà* "form a sort of verb without morphological variation, [which is] impersonal, unimodal (indicative) and unitemporal (present) ... which refuses nominal support" (1969: 201). The data presented in this section reveal these and additional idiosyncracies of *voilà* and *voici*.

Purely pragmatic accounts also fail to capture the full range of linguistic behavior these forms display. Authors adopting a purely pragmatic approach, such as Grenoble and Riley (1996), propose functional labels for *voilà* and *voici*, such as *presentative deictics*, then demonstrate how such these linguistic units fulfill the function defined by the label. While they serve to elucidate the function of these forms, such accounts generally ignore syntactic behavior to a large extent. Indeed, they have to, since not all of the behavior of linguistic units is predictable on the basis of their function.

We build on both lines of previous work on these deictic demonstratives, by investigating the extent to which their particular pragmatics explains their aberrant syntax. In this section we examine the French central deictic and show (in section 2.1) that even the most basic senses of *voilà* and *voici* cannot be classified as belonging to any existing grammatical class, since they share syntactic characteristics with declaratives (section 2.2) and imperatives (section 2.3), and demonstrate still other behavior that is unique (section 2.4). This descriptive analysis of the central sense of *voilà* and *voici* will serve as the basis for our analysis of other senses in section 3 and for our comparison with English equivalents in section 4.

2.1. *Introduction to the central case*

As in English *there* (Lakoff 1987), the central sense of deictic demonstratives *voilà* and *voici* in French is a spatial one, exemplified in (2).

(2) a. *Voilà/voici son sac.*
        'There's/here's his bag.'
     b. *Voilà/voici les clés que tu cherchais.*
        'There/here are the keys you were looking for.'

All other senses are derived either directly or indirectly from this sense. There are several reasons to believe that the central sense is this spatial one. First, when words or other constructions have multiple, related meanings, it is usually a spatial domain that serves as the basis for (metaphorical) extensions to discourse, time, and other conceptual domains. As we will see in section 3, *voilà* and *voici* are metaphorically extended to these domains, which implies that the spatial sense is central. Second, the syntactic constraints on the spatial sense are the least restrictive—other senses apply additional limits to the syntactic range of *voilà* and *voici*. Finally, *voilà* and *voici* are historically composed of *voi* 'see (imperative)' and the clitics *là* 'there' and *ci* 'here', which belong to the domain of spatial perception. All this evidence points to the spatial sense as the primary or central sense of *voilà* and *voici*.

The semantics of the central sense of the *voilà*-construction can be described in terms of an idealized cognitive model (ICM) that involves "Pointing Out" (Lakoff 1987). ICMs are schematic-level knowledge structures with gestalt and prototype properties. The Pointing Out ICM is an experiential gestalt that is common and crucial in young children's linguistic and nonlinguistic interaction. Lakoff describes the Pointing Out ICM as follows:

It is assumed as a background that some entity exists and is present at some location in the speaker's visual field, that the speaker is directing his attention at it, and that the hearer is interested in its whereabouts but does not have his attention focused on it and may not even know that it is present. The speaker then directs the hearer's attention to the location of the entity (perhaps accompanied by a pointing gesture) and brings it to the hearer's attention that the entity is at the specified location . . . . (Lakoff 1987: 490)

In this ICM, *voilà* and *voici* explicitly encode both a directive to focus attention (*voi*-) and the location of the entity (*-ci* or *-la*). The entity being pointed out is syntactically similar to a direct object.

In the remainder of this section, we will describe the central *voilà*-construction, including the form and meaning properties it shares with

the French declarative and imperative constructions, as well as those that are unique to the central senses of *voilà* and *voici*.

2.2.   Voilà *and* voici *as declaratives*

The basic structure of the central deictic is a construction with the following minimal specification: (a) *voilà* or *voici* and (b) an optionally omittable noun phrase, which acts as a direct object in the construction. The noun phrase (NP) of the *voilà*-construction can optionally include modifiers of all sorts and can be definite or indefinite, as illustrated in (3). (From this point onward, we will refer to both *voilà* and *voici* constructions as "*voilà*" constructions. Unless noted otherwise, *voilà* and *voici* should be assumed to both be possible, contrasting only in that *voici* invokes proximal deixis and *voilà* distal deixis.)

(3)   Mod + N
          Voilà ton petit frère.
          'There's your little brother.'

    indefinite determiner + N   *Voilà un oiseau / Voilà des oiseaux.*
          'There's a bird / There are some birds.'

    definite determiner + N   *Voilà le roi.*
          'There's the king.'

    N + relative clause   *Voilà la fille dont je t'avais parlé.*
          'There's the girl that I talked to you about.'
          Voilà Paul qui pleure.
          'There's Paul crying.'

    N + gerundial phrase   *Voilà Marie travaillant.*
          'There's Marie working.'

Optionally, the direct object NP can be pronominalized, as in example (4). In this respect, the syntax of the central deictic is like that of a declarative clause. Pronominalization with the *voilà*-construction places the direct object pronoun (underlined in [4]) before *voilà* (4a). We observe the same pattern in declaratives (4b), but not in affirmative imperatives, which place the pronoun after the verb (4c).

(4)   a.   *Voilà les clés que tu cherchais.*   *Les voilà.*
       'There are the keys you were looking for.'   'There they are.'
    b.   *Je vois les clés que tu cherchais.*   *Je les vois.*
       'I see the keys you were looking for.'   'I see them.'
    c.   *Apporte les clés que je cherchais.*   *Apporte-les.*
       'Bring the keys I was looking for.'   'Bring them.'

In addition to pronominalizing like a declarative, the *voilà*-construction shares with declaratives the function of expressing a proposition. *Voilà* is

used to convey not only 'look at that thing there', as an imperative would, but additionally, 'that thing is there'. We can evaluate whether the *voilà*-construction has an implied proposition using the *Oui, je sais* 'Yes, I know' test (Jones 1996: 181). If a sentence can be easily answered with *Oui, je sais*, then a proposition has been expressed. This test works for both declarative (5a) and *voilà*-constructions (5b), but fails for imperatives (5c). The first two express a proposition, while the third does not.

(5) a. –*Je lui ai parlé hier.*
        'I talked to her yesterday.'
        –*Oui, je sais.*
        'Yes, I know.'
    b. –*Voilà tes clés.*
        'There are your keys.'
        –*Oui, je sais.*
        'Yes, I know.'
    c. –*Regardez les petites vaches!*
        'Look at the little cows!'
        –**Oui, je sais.*
        'Yes, I know.'[1]

Like declaratives and other clauses expressing propositions, *voilà* can also be embedded in a relative clause, thus modifying the subject (see [6a]), direct object (6b), or indirect object (6c) of the main clause. This embedding results in a relativized NP, which serves to parenthetically pick out the referent in the current speech context.

(6) a. *L'homme que voilà est mon amant.*
        'The man (who is) there is my lover.'
    b. *Mon frère a vu l'homme que voilà dans un quartier riche.*
        'My brother saw that man (who is) there in a rich neighborhood.'
    c. *J'ai parlé à la femme que voilà.*
        'I talked to that woman (who is) there.'

Imperatives (see [7a]) and other cases where the verb does not express a proposition, such as questions (7b) and exhortations (7c), however, defy relativization.

(7) a. **J'ai vu l'homme que regarde!*
        'I saw the man who look (imperative) at him!'
    b. **J'ai vu l'homme que connais-tu?*
        'I saw the man whom do you know?'
    c. **J'aime sa gueule que qu'il ferme!*
        'I don't like his face that why doesn't he shut!'

The central *voilà*-construction thus shares the pragmatic function of expressing a proposition with declarative sentences. As a result, the central *voilà* case adopts similar patterns of pronominalization and embedding in which *voilà* acts like a verb with a direct object NP.

2.3. Voilà *and* voici *as imperatives*

The *voilà*-construction differs from declarative constructions in some respects, however. *Voilà*-constructions lack an explicit subject, a characteristic which is shared in French only by imperatives. In many pro-drop languages, such as Spanish, Italian, and Chinese (Matushansky 1998) a subject pronoun can be omitted when the subject is known to the speaker and interlocutor. In French, which is generally not pro-drop, imperatives take no explicit subject (as the subject is always the interlocutor). We hypothesize that *voilà*-constructions have no subject because, like imperatives, the subject is understood; in both the Pointing Out ICM and imperatives, there is an implicit understanding that the interlocutor is asked to perform some action.

We may ask whether *voilà*'s lack of a subject is an innovation or a historical relic. After all, the central *voilà*-construction was historically an imperative, which may also account for the origin of the lack of an explicit subject. *Voilà* and *voici* derive historically from imperative forms of the verb 'to see', which are *vois* (informal) or *voyez* (formal) in Modern French, followed by a deictic locative adverb, either *ci* 'here' or *là* 'there', both of which still exist as clitics in Modern French. Very early attested forms maintained verbal inflection and permitted certain pronouns to come between the verbal form and the locative clitic, but there are few attested cases of expressed subjects with *voilà*; these few exceptions described in section 2.4 below.

These facts suggest that in addition to their syntactic similarities to declarative constructions, *voilà*-constructions have retained their lack of an explicit subject due to the meaning they share with imperatives.

2.4. *Properties unique to* voilà *and* voici

We have seen ways in which the central *voilà*-construction patterns with declaratives and imperatives. It also acts idiosyncratically, in its interactions with the benefactive/adversative construction and negativization.

In French, many verbal constructions can acquire indirect objects via the well-documented benefactive/adversative construction (Smith 1997), including declaratives (8a) and imperatives (8b). This construction adds an indirect object, which expresses an entity that is positively or negatively affected by the event described in the clause.

(8) a. *Il t'a piqué ton sac.*
         'He stole (from you) your bag.'
     b. *Regarde-moi ce livre.*
         'See (look at) this book for me.'

As seen in (9a) and (9b), *voilà* rejects a benefactive or adversative indi-
rect object, despite the fact that, as shown in (8), its two major functional
components, the statement of a proposition and the directive to the inter-
locutor to focus attention on that object, are both independently com-
patible with the benefactive/adversative.

(9) a. **Voilà-moi ce livre.*
         'There's that book for me.'
     b. **Me voilà ce livre.*
         'There's that book for me.'

The semantics of indirect object–adding constructions is actually in
conflict with one particular aspect of the propositional content of *voilà*.
Voilà expresses not just any proposition, but more specifically a loca-
tional state. As opposed to an event or action, the use of *voilà* asserts
an entity to be stably located in an indicated location. The semantics
of describing a locational state conflicts with that of the benefactive/
adversative construction in that the benefactive/adversative construction
describes some action or event as occurring to the benefit or detriment of
the indirect object. Similar constraints are found in declarative construc-
tions that express locational states, including existentials (10a and b) and
copular constructions (10c).

(10) a. **Il m'y a ce livre.*
          'There is this book for me.'
      b. **Il t'existe un Père Noël.*
          'There exists for you a Santa Claus.'
      c. **La table m'est grande.*
          'The table is big for me.'

A second way in which the central *voilà*-construction is grammatically
unique is in its rejection of simple negation (11b), usually formed by sur-
rounding the verb with *ne* and *pas* (11a).

(11) a. *Il ne part pas.*
          'He isn't leaving.'
      b. **Ne voilà pas ton frère.*
          'There isn't your brother.'

The impossibility of negating a *voilà*-construction distinguishes *voilà*-
constructions from (to our knowledge) all other phrasal constructions

in French. However, *voilà* does allow interronegativization. Interronegatives are negative questions to which a positive response may be expected (12a). When interronegativized, *voilà* also optionally surfaces with an inverted impersonal subject *t-il* appended to it (12b).

(12)   a.   *Ne voilà pas ton frère?*
            'Isn't that your brother there?'
      b.   *Ne voilà-t-il pas ton frère?*
            'Isn't that your brother there?'

The appearance of an impersonal subject in forms like (12b) is surprising when compared to all other the uses of *voilà*, none of which have an expressed subject. The form in (12b) is similar to interronegative forms of French verbs in general, which include a subject pronoun (for example, *il* 'he' or *elle* 'she') and often the epenthetic *-t*, which, as illustrated in (13), is inserted between a verb form that is orthographically vowel-final and an inverted vowel-initial pronominal subject (cf. Grévisse 1970).

(13)   *N'aime-t-elle pas se promener au jardin?*
       'Doesn't she like to walk in the garden?'

Grévisse (1970) claims that the subject in sentences like (12b) is a personal subject, much like the personal subject in (13). However, this claim is false: the suffixed *-il* in (12b) is an impersonal pronoun. As shown by (14), the pronoun is always realized as the masculine (and impersonal) *il*, even when the object or interlocutor (the only real candidates for subject) are of feminine gender.

(14)   a.   *Ne voilà-t-*il *pas un homme?*
            'Isn't that a man there?'
      b.   *Ne voilà-t-*il *pas une femme?*
            'Isn't that a woman there?'
      c.   *Ne voilà-t-*elle *pas une femme?*
            'Isn't that a woman there?'

The alternation between the absence of a subject in most uses of *voilà* and the use of an impersonal *il* in the interronegative form is a property unique to the *voilà*-construction. Imperatives, the only other syntactically subjectless forms of the language, are not subject to interronegative inversion, most likely because they do not express a proposition. The use of the impersonal *il* in the *voilà*-construction is instead reminiscent of a class of French verbs known as *impersonal presentationals. Il y a* 'there is', *Il existe* 'there exists', and *Il faut* 'is needed' are examples of these ''semantically subjectless'' verbs that take the syntactically impersonal pronoun subject *il* in all verbal modes, including interronegativization, see (15).

(15) a. *N'y at-il pas un blond dans la salle d'attente?*
       'Isn't there a blonde in the waiting room?'
    b. *Ne faut-il pas deux kilos de beurre?*
       'Aren't two kilograms of butter needed?'
    c. *Ne s'agit-il pas d'un grand homme blond dans le film?*
       'Isn't the film about a tall blond man?'

It may well be that the *-t-il* complex in *voilà* interronegatives (see [12b]) is created by analogy or blending (Fauconnier and Turner 1996) with the interronegative forms of impersonal presentationals (example [15]). There is a semantic core shared by the central *voilà*-construction and these impersonal presentationals; all present a new element within some space, either the space of the present context (deixis) or of encyclopedic knowledge (existential uses) (Lambrecht 1981).

The central *voilà*-construction differs from both declaratives and imperatives in that it cannot take on an indirect object and cannot be negated. It rejects the benefactive/adversative construction due to the *voilà*-construction's semantics, which describe a state of affairs. It is subject to interronegativization, where it in part adopts the form of impersonal presentationals, with which it shares the pragmatic function of presenting a new element in some space. In these aspects, the *voilà*-construction is unique, patterning neither entirely like an imperative nor entirely like a declarative. We have shown above that the distribution of these aspects is not random; rather, it is based on the function of the Pointing Out ICM which motivates these syntactic properties. More such evidence can be found in Bergen and Plauché (2001).

In the next section, section 3, we continue with our analysis of *voilà*-constructions, now moving on to extensions from the central sense. In section 4, we compare the characteristics of the central and extended deictic demonstratives in French with their English counterparts—*there* and *here* constructions.

3. Extensions: Mechanisms and expressive requirements

In the previous section, we saw that the central, spatial case of the *voilà*-construction defies classification into existing grammatical categories and can only be successfully analyzed when both pragmatic and syntactic properties are considered. In this section, we examine the remaining, non-spatial uses of *voilà* and *voici*, each of which is semantically and syntactically unique.

Voilà and *voici* form a radial category (Lakoff 1987; Brugman 1981; Lindner 1981) in which the extended senses stem directly or indirectly

from the central deictic sense and so, per the Invariance Hypothesis (Lakoff 1993), preserve or adapt most of the conceptual and linguistic structure we have discussed above. In particular, we will see that deictic structure is retained in metaphorical structure, as proposed by Moore (1998). Furthermore, the syntactic and semantic properties of extensions from the central, spatial senses of *voilà* and *voici* are governed by aspects of the extension mechanisms (i.e., metaphor, metonymy, and blending) as well as by the expressive requirements of the target domains of the extensions. Similar dependencies and restrictions are also found in the equivalent extensions in English (section 4).

In this section, we will make use of the notion of inheritance when comparing related constructions. For most formal theories that incorporate this notion (Construction Grammar, HPSG, etc.), inheritance is complete: one construction is said to inherit another when it includes the entirety of the latter construction plus additional particularities. In a partial view of inheritance (Goldberg 1995) however, an extension may inherit aspects of another construction, including structure and meaning. In the present work, we assume a partial view of inheritance.

3.1.   *The event deictic*

Voilà is commonly used to point out an event, rather than an object. One way this is effected is through the following syntactic arrangement: *voilà* (or *voici*) followed by *que* (a complementizer) and a finite clause (16a–b).[2] This pattern is common in French—most transitive verbs can take *que* plus a finite clause as their direct object (16c–d). In other words, *voilà* acts in this respect like any other transitive verb.

(16)   a.   *Voilà que Marie part.*
             'There's Marie leaving.'
       b.   *Voilà que Jean embrasse Marie.*
             'There's Jean kissing Marie.'
       c.   *Je sais que Marie aime Paul.*
             'I know that Marie loves Paul.'
       d.   *J'ai vue que Marie embrassait Paul.*
             'I saw that Marie was kissing Paul.'

Alternatively though, an event or action may be indicated by an infinitival phrase, which follows *voilà* (17a–b). This pattern is less prevalent than the one shown in (16), and is restricted to a particular class of French verbs. The only other verbs that may be followed by an infinitival phrase denoting an event are *laisser* 'to let' (17c), *faire* 'to make', and verbs of perception like *voir* 'to see' (17d).

(17)   a.   *Voilà partir Marie (Marie partir).*
             'There's Marie leaving.'
       b.   *Voici venir le temps des enfants.*
             'Here's the children's hour coming.'[3]
       c.   *Paul a laissé/fait parler le Président.*
             'Paul let/made the President speak.'
       d.   *Paul a vu/entendu Marie partir (Marie partir).*
             'Paul saw/heard Mary leaving.'

What allows *voilà* to be used in this second permutation, along with *laisser*, *faire*, and verbs of perception, is their shared meaning. Just like verbs of perception, central *voilà* takes as its direct object an entity that can be perceived. And like verbs of perception, *voilà* can also be used in a slightly more complex construction in which an event rather than an entity is perceived. We will see in section 4.2 that English *there*-constructions display similar behavior.

3.2.   *The discourse deictic*

The central deictic is also extended to the domain of (meta-)discourse. In this use, as has been previously shown for other languages with binary deictics (Fillmore 1997), the proximal form, *voici*, refers cataphorically to discourse elements that will occur in the near future (18a), whereas the distal form, *voilà*, points anaphorically to discourse elements that were produced in the recent past (18b).

(18)   a.   *Tu m'as demandé de te donner deux exemples. Les voici ...*
             'You asked me to give you two examples. Here they are ...'
             [Examples follow.]
       b.   *... Tu m'as demandé de te donner deux exemples. Les voilà.*
             [Examples precede.] ... 'You asked me to give you two examples. There they are.'

In French, as in other languages, discourse elements are understood as physical entities, and the entirety of a discourse is understood as a space in which those entities are located, through the metaphors DISCOURSE SPACE IS PHYSICAL SPACE and DISCOURSE ELEMENTS ARE ENTITIES (Lakoff 1987). What's more, speaker and hearer are seen as experiencing motion relative to the discourse, through DISCOURSE IS MOTION ALONG A PATH. As in other target domains in French that have a temporal component and that are understood in terms of relative motion, future discourse is seen as ahead of the speaker and hearer and past discourse is behind. These mappings are attested elsewhere in French (19), as well as in English (see section 4.2). It should be noted that the use of these metaphors with the

voilà-construction is not unique to the domain of discourse. *Voilà* and *voici* can be used in a similar way with any domain involving sequences of events occurring over time, such as in sports narration or a written recipe.

(19)   a.   *Quand est-ce qu'on va arriver à la partie interessante de l'histoire?*
'When are we going to get to (arrive at) the interesting part of the story?'
       b.   *Je n'ai pas pu suivre la discussion.*
'I couldn't follow the discussion.'

The discourse deictic inherits the syntactic structure of the central deictic, along with restrictions that derive from its particular pragmatics. In particular, the central deictic allows a somewhat free exchange of the proximal and distal forms in that the same object in the same location could be indicated using either *voilà* or *voici*, depending on the speaker's construal of its position relative to speaker and hearer. In the discourse deictic, however, the binary semantic distinction between *voilà* and *voici* is more strictly maintained—*voici*, for example, can never be used anaphorically. In other senses of *voilà* and *voici*, to be described below, the distinction between the proximal and distal disappears entirely or is made obsolete by the use of *voilà* alone in those senses. The semantic distinction shown by the discourse deictic may have been preserved due to the target domain (discourse) requirement for a way to distinguish between past and future speech or by the character of the metaphor that maps to this target domain (Plauché and Bergen 1999).

An interjected version of the distal discourse deictic is a particularly frequent use of *voilà* in adult spoken French. A preliminary search for instances of *voilà* in the Barnes Corpus (Barnes 1985) shows that in a recorded conversation scenario, the most frequent cases of *voilà* are *voilà* by itself and *voilà, c'est ça* 'There, that's it.' In both cases, *voilà* points to discourse elements in the recent past, just as it does in the examples above, and additionally serves as a turn-shift marker (20).

(20)   E: *Tu as deux chambres?] Tu as deux chambres, une euh cuisine?*
'[You have two rooms?] You have two rooms, one uh kitchen?'
       M: *une grande salle à manger*
'One big dining room'
       E: *une grande salle à manger une cuisine et une salle de bains.*
'One big dining room, one kitchen, and one bathroom.'

M: *Voilà c'est ça. Et puis la chambre d'invités est quand même grande notre chambre est immense à nous.*
'That's right. And the guest bedroom is actually pretty big, our room is immense for us.'

3.3.   *The central time deictic*

French deictic demonstrative constructions can also be extended to the domain of time, where they pick out points in time, instead of objects in space (21).

(21)   a.   *Voilà l'instant que nous attendions tous.*
'Here's the moment we've all been waiting for.'
b.   *Voilà le moment de la journée que je préfère.*
'This is the time of day that I like the most.'
c.   *Voilà le jour que j'attendais.*
'Here's the day [unit] I've been waiting for.'

Three restrictions are placed on this sense. First, the time referred to must be construed as a point in time, not as temporally extended. French distinguishes between certain punctual and extended units of time lexically, contrasting words like *jour* 'day (punctual)' and *soir* 'evening (punctual)' with *journée* 'day (extended)' and *soirée* 'evening (extended).' As can be seen in (22), the extended versions are not permissible in the central time deictic, while the punctual ones are perfectly felicitous.

(22)   a.   **Voilà la journée que j'attendais.*
'Here's the day [extended] I've been waiting for.'
b.   *Voilà le jour que j'attendais.*
'Here's the day [punctual] that I've been waiting for.'

Second, the construction can only refer to points in time that are current. That is, there is no way to use the central time deictic to refer to a point in time that has passed or is yet to arrive (23).

(23)   a.   **Voilà l'instant quand tu vas arriver.*
'There's the instant when you will arrive.'
b.   **Voilà l'instant quand tu es arrivé.*
'There's the instant when you arrived.'

These first two restrictions on the central time deictic arise from the metaphors by which they are mapped from the central sense. These metaphors, TIME IS SPACE and POINTS IN TIME ARE POINTS IN SPACE, allow time to be understood as a line, and points in time as points on that line. These metaphors are common in French, where they are used to refer to points

in time with the same linguistic structures that are used to refer to objects in space (24).

(24)   a.   *On est sur le point de remporter Roland Garros pour la troisième fois.*
              'We're about to take the French Open for the third time.'
       b.   *La plupart des chercheurs vous diront que nous voyageons tous dans le temps.*
              'Most researchers will tell you that we all travel through [lit.: "in"] time.'

The third restriction on the central time deictic is a product of the metaphors by which it is derived from the central deictic. The central deictic is used to point to elements within the field of vision of the speaker and hearer. The metaphors TIME IS SPACE and POINTS IN TIME ARE POINTS IN SPACE map the location of the speaker and hearer onto a one-dimensional "timeline". Just as the central deictic can only refer to entities in the current physical context, so the only instants that can be referred to in the central time sense are those in the immediate temporal context—that is, now. Because only the current time can be referred to using the central time deictic, times referred to must be delimited and not extended over time—if they pass beyond the bounds of now, they are no longer in the current temporal context.

3.4.   *The now deictic*

Another time-related extension of the central deictic, the now deictic, calls to the interlocutor's attention that a state now holds, rather than indicating that an object is at a location. This sense, exemplified in (25), is characterized by a particular intonation pattern in many cases: a rise in pitch across the word *voilà*. The clause is often preceded by *et* 'and' or *mais* 'but', which identify how the now deictic utterance fits in with previous discourse (25a).

(25)   a.   *Et nous voilà au labo.*
              'And now here we are in the lab.'
       b.   *Nous y voilà.*
              'Now here we are.'

This sense is derived not by metaphorical mapping, but through constructional grounding (Johnson 1998). Constructional grounding is the relation between two constructions or senses of a single construction, in line with the following scenario. When two interpretations (e.g., presence

and arrival) are commonly co-associated with a construction, making the construction itself frequently ambiguous between the two interpretations, the construction can develop a secondary meaning. Other studies (Sweetser 1990 and Johnson 1998) discuss this process more thoroughly.

In the case of the now deictic, when we use the central deictic to point out the presence of an element to an interlocutor (who was previously unaware of it), we often do so because the element has recently arrived in our field of vision; perhaps because it was not present there a moment ago. This interpretation is particularly likely if the utterance contains a locational complement, specifying the location in which the entity can be found, as in (25a), because the presence of a locational complement makes *voilà* appear redundant, unless it is interpreted as meaning 'now'.

Evidence that the now deictic is distinct from the central deictic comes from its divergent syntax and pragmatics. The now deictic, as opposed to the central deictic, requires an explicitly specified locational complement, whether pronominalized (25a) or not (25b), while the central deictic need not include any locational complement. (The sentences in [25] might be uttered by a tour guide.)

The now deictic also differs pragmatically from the central deictic. Unlike the central deictic, which requires that the object or event referred to lie within the perceptual realm of the speaker, the now deictic may refer to objects outside of the immediate perceptual realm if the NP is an expected state or event that finally holds true (26).

(26) *Voilà mon prof au labo*.
      'Now [looking at watch] my prof is in the lab.'

A final difference between the central and now deictics is that in the central deictic, the use of first person is uncommon, due to conflicting presuppositions in the context and the potential construction. The first person is commonly used in the now deictic, however, another indication that the construction is an independent sense of *voilà*, derived from the particular pragmatics of the now deictic.

3.5. *The stative deictic*

Not all extensions of a radial category must be directly extended from the central case; some may stem from other extended senses. This phenomenon has been discussed for lexical polysemy networks (Lakoff 1987; Brugman 1981), for subjecthood (Van Oosten 1986), as well as for families of constructions (Janda 1990; Fillmore 1998).

The stative deictic is mapped from the now deictic through the metaphor STATES ARE LOCATIONS. It inherits from the now deictic its syntactic restrictions, its stress pattern, and the tendency to occur with *et* 'and' or

mais 'but'. Instead of a specified locational complement, however, the stative deictic requires a stative complement, such as an adjective or the *qui* + verb-construction (functionally similar to the gerund in English). The interpretation that emerges is one of stating that an entity is now in a state in which it previously was not, as in (27), rather than being in a new location, as in the now deictic.

(27)   a.   *Voilà mon oncle content.*
            'Now my uncle is happy.'
       b.   *Le voilà content.*
            'Now he's happy.'
       c.   *Voilà mon frère qui pleure.*
            'Now my brother is crying.'
       d.   *Me voilà partie.*
            'Now I'm gone.'

Note that the sentence in (27c) can also have a central deictic meaning if the *qui* + verb-construction is acting as a post-nominal modifier, where the speaker is pointing out the crying brother as opposed to some other brother (in which case the modification is restrictive). It can also have the central meaning when the *qui* + verb-construction is actually a descriptor of an action being pointed out (where the modification is nonrestrictive). In the now and stative deictics, however, the speaker does not point out the object performing the action; in fact, the object need not even be located in the visual field of the speaker or hearer.

The metaphor that gives rise to the stative deictic, STATES ARE LOCATIONS, is common elsewhere in both French and English, see (28). STATES ARE LOCATIONS is apparent in the *voilà* sentences in (27), in which *voilà* takes a state descriptor in place of the locative descriptor from the central deictic. In the examples in (28), prepositions and verbal predicates may encode the state descriptor, as well. This is a general fact about the expression of states in French.

(28)   a.   *Elle est en colère.*
            'She's angry.'
       b.   *Je suis dans une fureur.*
            'I am in a fury.'
       c.   *Il est tombé dans les pommes.*
            'He passed out.' (lit.: 'He fell in the apples.')

3.6.   *Span-of-time (SPoT) deictic*

An additional example of a constructional extension that is extended from a noncentral sense is the span-of-time (SPoT) deictic, which motivates sentences like those in (29).

(29) a. *Voilà deux heures que ça sent la vache.*
          '(Notice that) it's now two hours that it's been smelling of
          cow.'
      b. *Voilà un an qu'on se connaît.*
          '(Notice that) it's now one year that we've known each other.'

What is particularly striking about the span-of-time deictic is that its syntactic form appears not to be directly extended from any other senses of the *voilà*-construction. Its form, composed of *voilà* + NP[span of time] + que + finite phrase, appears in only one other construction of French, the span-of-time (SPoT) construction shown in (30), which carries the meaning 'It has been Y time that Z'. The span-of-time construction is identical to the examples in (29), except that we find either *ça fait* 'that makes' or *il y a* 'there are (existential)' instead of *voilà* at the beginning of the clause.

(30) a. *Ça fait deux ans que je vous attend.*
          'I've been waiting for you for two years.'
      b. *Il y a deux ans que j#habite dans ce quartier.*
          'I've been living in this neighborhood for two years.'

This general span-of-time construction in (30) picks out a span of time lasting up until the present during which the state descibed by the finite phrase holds true. The meaning that emerges from the span-of-time deictic (29), which uses *voilà*, is similar to that of the general span-of-time construction (30), with the additional directive to the interlocutor to notice that at present, the indicated span of time has passed: '(Notice that) it has now been Y time that Z.'

The span-of-time deictic construction can be analyzed as the result of a grammatical *blend*, a cognitive operation that projects two input spaces onto a single, separate space. The resulting blended space inherits parts of the structure of the two inputs spaces and forms an original, emergent structure (Fauconnier and Turner 1996). The extension of *voilà* that has acquired the meaning of 'now', the now deictic, is available to undergo constructional blending with the span-of-time construction. This blend projects the two input spaces—the span-of-time construction and the now deictic—onto the blended space of the span-of-time deictic construction. The emergent meaning of this blend, '(Notice that) it has now been Y time that Z', is the result of the integration of the meaning associated with the now deictic (including the Pointing Out ICM inherited from the central deictic) and the meaning associated with the span-of-time construction ('It has been Y time that Z').

Syntactically, the blended construction is identical to the span-of-time construction, with one exception. The verbs in *ça fait* and *il y a* can be

conjugated in future or past tenses with the span-of-time construction. In the blended span-of-time deictic construction, however, *voilà* is anchored to the time of utterance: it does not conjugate and cannot refer to future or past reference times (31), a restriction inherited from the now deictic.

(31)   a.   *Dans un mois, ça fera / il y aura / *voilà deux ans qu'on se connaîtra.*
            'In a month, it will be two years that we will have known each other.'
       b.   *Ça faisait / Il y avait / ?Voilà deux ans qu'on se connaissait.*
            'It was for two years that we had known each other.'

3.7.   *Paragon*

While other senses of *voilà* functionally point out a novel object, event, or abstract entity, the paragon deictic serves to *evaluate* a referent already present in the discourse. The paragon deictic points out an item (or a set of items) and calls the interlocutor's attention to the (re-)qualification of the item in question as not simply a member of a category, but in fact as a paragon of that category. The paragon deictic (32) exhibits the syntactic restriction of only accepting indefinite or partitive NPs (French partitive articles are variants of *de* 'some'), optionally in combination with the pronominal *en* 'some' (32c).

(32)   a.   *Voilà une bonne idée.*
            'There's a good idea.'
       b.   *Voilà de la bonne littérature.*
            'Now there's good literature.'
       c.   *En voilà des étudiants!*
            'Now there are some students (for you)!'

In the central deictic and elsewhere, indefinites and partitives have two main functions: they introduce an object into the discourse by its category name and they also assert the object's membership of the specified category. For example, the sentences in (33) both introduce the referent "dog" into the discourse and assign the specific dog to the category of dogs. When the partitive is used in the central deictic construction, it acquires—from the semantics of *voilà*—the additional speech-act function of calling the interlocutor's attention to the referent.

(33)   a.   *Il y a un chien sur la veranda.*
            'There's a dog on the porch.'
       b.   *Voilà un chien.*
            'There's a dog.'

The paragon deictic seems to be derived through constructional grounding from the subset of the central deictic cases with partitive NPs. As we mentioned in section 3.4, constructional grounding can lead to the development of a secondary meaning when two states of affairs are commonly co-associated with a construction and the construction itself is frequently ambiguous between the two senses. In this case, the central deictic, which points out a novel object with an implied categorization, develops the secondary meaning of the paragon deictic, which points out something novel about the categorization of an observed referent.

The ambiguity is present whenever the interlocutor is unaware of the appropriate categorization of an entity, or whenever the speaker categorizes the entity in a way that is new to the hearer. For example, utterances like the one in (34) are ambiguous in this way. Here, if the category "hippopotamus", or the categorization of the entity as a hippopotamus and not, say, a puppy, is new to the interlocutor (as in a parent speaking to a child), the utterance conveys two facts in addition to the pragmatics of the Pointing Out ICM: (i) there is a class of entities called "hippopotamus", and (ii) that entity over there is one of those entities. This categorization interpretation is most likely with indefinite or partitive NPs because a definite NP is more likely to be used when the item has already been introduced into the discourse or if the speaker assumes the interlocutor to be familiar with it.

(34) a. *Voilà un hippopotame.*
          'There's a hippopotamus.'

To recap the constructional grounding explanation given here, when the central deictic has a partitive NP, the interlocutor may interpret the intention of the speaker as describing the object as a member of the category identified in the NP. This may lead to a reinterpretation of the meaning of certain central deictics, particularly those with partitive NPs, and may give rise to a new sense for the construction. In particular, this new sense focuses on the assertion that a particular entity belongs to a particular category.

In this way, a subset of central deictic constructions gives rise to a construction that allows us to refer to the categorization of referents, not just the presence of the referents themselves. Pointing out a novel categorization of a known referent is particularly useful when a referent is a particularly good (paragon) member or a particularly bad (anti-paragon) member of this category. In the former case, the paragon deictic construction is accompanied by a particular intonation contour found, in general, with an expression of awe or of paragon status. The intonational pattern associated with the paragon deictic is similar in English and can be described

by a low to high pitch contour over the word *voilà* followed by a low pitch over the remaining utterance. Other utterances that can make use of this intonational contour are exemplified in (35).

(35)   a.   <u>*Ça c'est*</u> *une bonne idée*.
            'Now, that's a good idea.'
       b.   *Si Marco n'y va pas,* <u>*eh ben, moi*</u> *non plus*.
            'If Marco isn't going, well then, me neither.'

3.8.   *The radial category of* voilà

The set of constructions formed around French *voilà* and *voici* discussed in this section have been analyzed as a radial category of constructions, in which all nonspatial senses of *voilà* are direct or indirect extensions of the central deictic, produced via a variety of cognitive mechanisms (metaphor, blending, and constructional grounding). The extensions of *voilà* differ semantically and syntactically from the central deictic and from one another, encompassing meanings from the realm of discourse to state descriptions. The syntactic restrictions and properties of these extensions are governed by partial inheritance from the central deictic, properties of the extension mechansims themselves, and expressive requirements of the target domains. Figure 1 is a graphical depiction of the radial category of *voilà*-constructions.
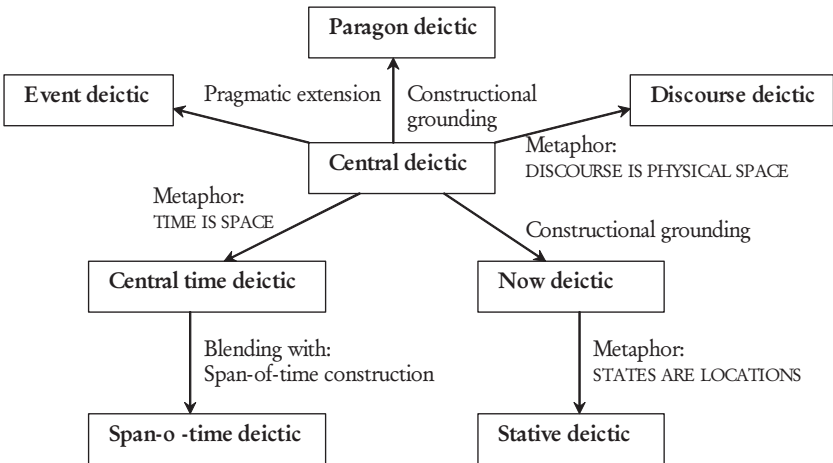

Figure 1.   *The radial category of* voilà

The next section compares the deictic constructions we have seen in French with their counterparts in English, and contrasts existential constructions in the two languages.

4. Deictics and existentials in French and English

Just like French, English has a pair of deictic demonstratives, which also display a large number of related senses. This section compares the behavior and scope of *voilà* and *voici* and their English equivalents *there* and *here*. This comparison will uncover significant similarities in both the range of senses in the two languages and linguistic restrictions on them. These similarities are remarkable since deictic demonstratives evolved separately in the two languages.

The comparison of French and English will also uncover, however, a dramatic difference in the range of uses of deictic demonstratives. English *there*-constructions are used not only for the purpose of deixis, but also in existential constructions, such as *There's a dog on the porch*, where the object referred to is not in the current speech context, but rather is simply in existence. In French, deictic demonstratives are not extended to existential functions. Rather, the unrelated form *il y a* covers much the same range of functions as English existential *there*. The patterning of deictics and existentials in the two languages will provide further evidence that that the linguistic behavior of these forms is constrained by their function and by their extension mechanisms.

4.1. *English and French central deictics*

In sections 2 and 3, we identified a total of eight different, yet related, *voilà*-constructions, and argued that the linguistic behavior of each could be largely explained on the basis of its expressive requirements and the nature of the extension mechanism at work. As we will see below, *there*-constructions in English display striking similarities to their French equivalents. They cover nearly the full range of expressive uses documented for *voilà* above and, in most cases, exhibit similar linguistic restrictions.

The central deictic *voilà*-construction, as described in section 2, uses the Pointing Out ICM to indicate the location of some object in the current physical context of the speaker and interlocutor. As extensively documented by Lakoff (1987), English also has a central deictic *there*-construction, which is functionally equivalent to French *voilà*. As seen in (36), English *there*-constructions are composed of a deictic demonstrative adverb, *here* or *there*, followed by an inflected verb, and a following noun phrase. The central deictic *there*-construction allows more linguistic

Table 1.   *Properties of central deictic* voilà *and their hypothesized explanations*

	Properties of central deictic *voilà*	Explanation
i.	The direct object pronominalizes like a declarative.	The central deictic, like a declarative, expresses a proposition.
ii.	There is no subject—the speaker and interlocutor are not expressed as arguments.	The interlocutor is understood from context and, as with imperatives, is instructed to perform an action.
iii.	The benefactive/adversative construction cannot be applied, as with verbs expressing a state of affairs.	The central deictic expresses a state of affairs.
iv.	Negation is not allowed.	The central deictic speech act includes a call to notice an object in a location.
v.	Interronegatives are possible.	Unlike true negation, the function of the interronegative is to hedge an assertion about a state of affairs, not to negate it.
vi.	The interronegative form optionally inverts with the impersonal pronoun *il*.	*Voilà* introduces a new element into some space, like other constructions that invert with an impersonal *il*.
vii.	*Voilà* can appear as a relative clause attached to nearly any NP, like declaratives.	The central deictic expresses a proposition.

variation than the central deictic *voilà*-construction—in English, *there* is followed by a verb which can be selected from among *be*, *come*, and *go*.

(36) a.   There's {Harry, Harry with a new hat, my favorite actor}.
      b.   There goes Harry.
      c.   Here comes Harry.

Further aspects of the linguistic behavior and pragmatic content of the central deictic *there*-construction will become clear through the following comparison with the central deictic *voilà*-construction. Recall from the discussion in section 2 that the central deictic displays the idiosyncratic set of linguistic properties seen in Table 1. For each, we hypothesized an explanation based on *voilà*'s central deictic function.

Of these seven characteristics of the central deictic *voilà*-construction, five apply to the behavior of central deictic *there*.

  i.   Just like central deictic *voilà*, central deictic *there* pronominalizes like an indicative, as in (37a), although in English, the entity identified is realized as a subject of *there*, not as an object, as in French. And just like its French counterpart, English central deictic *there* expresses a proposition, as demonstrated by the applicability of the ''Yes, I know''-test in English (37b).

(37)   a.   There he is.
     b.   –There's Harry with a red hat on.
         –Yes, I know.

ii.   Like central deictic *voilà*, central deictic *there* encodes neither the speaker nor the interlocutor as arguments since, once again, both are understood within the context of pointing an entity out to someone. Central deictic *there* does take a subject, *there*, which is not coreferential with either of these participants.

iii.   Just like central deictic *voilà*, central deictic *there* does not allow a benefactive complement (i.e., a PP headed by *for*, cf. [38a]). Notice that English does allow a *for*-headed complement in a deictic *there*-construction (38b), but here it has the function of identifying habitual behavior—quite different from the benefactive sense intended in (38a).

(38)   a.   *There's Harry for me. [Meaning: 'Harry is over there; look at him for me.']
     b.   There's Harry for you! [Meaning: 'That is habitual behavior for Harry.']

    The hypothesized explanation for this restriction on *voilà* was that the Pointing Out ICM expresses a state of affairs, which is incompatible with benefactivity. Like central deictic *voilà*, central deictic *there* expresses a state of affairs, without reference to that state's mutability, and patterns with other such utterances in rejecting benfactive *for*, as in (39).

(39)   a.   Two and a half centimeters are in an inch (*for you).
     b.   The Eiffel tower is tall (*for you).

iv.   Like central deictic *voilà*, central deictic *there* cannot be negated, also because of the content the speech act instantiates. Example (40) is possible only in an extremely jocular metalinguistic context, where a speaker is playing on the fact that central deictic *there* cannot be negated, thus intentionally misdirecting the interlocutor's attention.

(40)   *There isn't Harry.

v.   As seen in example (41a) below, unlike *voilà*, central deictic *there* cannot take an interronegative form. It can, however, express the same hedging function through the use of an interronegative tag as in (41b).

(41)   a.   *Isn't there my dog?
     b.   There's my dog, isn't there/it?

The restriction that interronegation with *there* may only occur on a tag may be due to the requirement that in *there*-constructions, the word *there* must come first. Placing any other sentential element before *there* yields a different construction. For example, (42) is not an example of the central deictic *there*-construction since it does not make use of the Pointing Out ICM—it is simply a standard copular declarative sentence.

(42)   My dog is there.

vi.   Central deictic *voilà* gains a subject pronoun when combined with the interronegative construction. We analyzed this as a blend, based on pragmatics shared by *voilà* and other impersonal presentationals. All these constructions introduce a new entity into a space, whether it is the current perceptual space (*voilà*) or existence space (the existentials). English central deictic *there* also introduces a new element into the current perceptual space, using the same basic ICM as *voilà*. However, *there* does not display any syntactic behavior analogous to English existentials, because—as we will see in section 4.3—the presentationals are themselves metaphorical extensions of the very same deictic *there*-construction.

vii.   The final property shown by *voilà* is not paralleled by English deictic demonstrative *there*. While a *voilà* clause can act as a relative clause, *there* cannot. Thus, sentences like those in (43) are not possible, while their French equivalents with *voilà* are perfectly acceptable.

(43)   a.   I fell in love with the wallpaper that {*there's, ?is there}.
                Je suis tombé amoureux du papier peint que voilà.
         b.   The dachshund that {*there's, ?is there} bit the postman.
                Le teckel que voilà a mordu le facteur.

This restriction may arise due to the same word-order constraint invoked to explain *there*'s resistance to interronegativization—the constraint that *there* must come first. In a relative clause, *there* would necessarily appear after its subject, that is, the entity it indicates, and would thereby violate the ordering constraint.

Semantically and pragmatically, central *voilà* and *there*-constructions bear a particularly close resemblance to one another, an especially surprising fact, given their different historical origins. In terms of their linguistic behavior, too, there are also strong similarities (along with some minor differences) which can be explained in terms of conflicting restrictions on the particular construction. The same will now be shown of the non-central senses of *voilà* and *there*-constructions.

Table 2. *Linguistic behavior of the various senses of* voilà *and proposed explanations*

	Linguistic behavior	Explanation
i. Event	Events can fill the object slot of the construction, and *voilà* can take an infinitival complement.	Like verbs of perception, *voilà* encodes a call to the interlocutor to perceive something (happening).
ii. Discourse	Both *voilà* and *voici* are used to refer to discourse, with *voilà* being predominantly anaphoric and *voici* exclusively cataphoric.	In the relevant metaphors, including DISCOURSE SPACE IS PHYSICAL SPACE, the future is ahead and past is behind.
iii. Paragon	Only accepts indefinite or partitive objects.	Derived through constructional grounding from cases where the central deictic overlaps with indefinites or partitives.
iv. Central time	Can only refer to the current time, and only to punctual, not progressive, time periods.	Just as central *voilà* points to the immediate physical space, so—through TIME IS SPACE—central time *voilà* points to current time.
v. Now	Requires a locational complement; can refer to events not currently visible; can take the first person as object.	*Voilà* can refer to arrivals, and through constructional grounding, it comes to refer to changes of state that happen elsewhere. The overlap cases specify where the arrival is happening, so a locational complement is required. Since the speaker can be the arriver, a first-person direct object is allowed.
vi. Stative	Has a complement that describes a new state of the object.	STATES ARE LOCATIONS allows states to be understood as locations; thus, changing state is understood as arriving at a new location.
vii. SPoT	Has the restricted form *voilà* + NP[span of time] + *que* + finite phrase; is grounded in current time.	Is a blend of the 'now' meaning of *voilà* from the now deictic with the span-of-time construction.

4.2.   *Extended senses of* there *and* voilà

A summary of the behavior of the different senses of *voilà*-constructions and their proposed explanations can be found in Table 2. Several of the uses of English *there* are extended by way of similar mechanisms with comparable results. The extension mechanisms and syntactic and semantic characteristics of event, discourse, and paragon senses are virtually identical in the two languages. However, those extensions that relate

directly to time in French, namely the central time, now, stative, and span-of-time senses, do not have clear correlates in English. We'll treat each of these groups in turn, beginning with those senses of *voilà* with direct English counterparts. A cross-linguistic comparison of these forms, including their extension mechanisms and their linguistic restrictions, provides additional evidence for the functionally based explanations we offered in section 3.

i. Like *voilà*, central deictic *there* is extended to the domain of events, where it can be used to identify an event in which the entity pointed out is engaged. In English as in French, the central deictic (44a) patterns with other verbs of perception (44b) and not with other types of verb (44c) in its choice of how to express an event.

    (44) a. There's Mary brushing her hair.
          b. Paul sees Mary brushing her hair.
          c. *Paul stops Mary brushing her hair.

ii. Similarly, the discourse deictics in English are nearly identical to their French counterparts. They are mapped by the same metaphors: DISCOURSE SPACE IS PHYSICAL SPACE, DISCOURSE ELEMENTS ARE ENTITIES, and DISCOURSE IS MOTION ALONG A PATH. Examples like those in (45), repeated from (18) and (19) above, attest to the similarity of the metaphors in the two languages (45a–b), as well as the parallel use of the French and the English discourse deictics (45c–d).

    (45) a. *Quand est-ce qu'on va arriver à la partie interessante de l'histoire?*
              'When are we going to get to the interesting part of the story?'
          b. *Je n'ai pas pu suivre la discussion.*
              'I couldn't follow the discussion.'
          c. *Tu m'as demandé de te donner deux exemples. Les voici . . .*
              'You asked me to give you two examples. Here they are . . .' [Examples follow.]
          d. *. . . Tu m'as demandé de te donner deux exemples. Les voilà.*
              [Examples precede.] '. . . You asked me to give you two examples. There they are.'

    The English and French discourse deictic demonstratives display a slight divergence in the contrastiveness of the distal and proximal forms: *voilà* and *voici*, or *there* and *here*. In both languages,

the distal (*voilà* or *there*) is predominantly used anaphorically—referring backwards, but can also be used cataphorically, while the proximal (*voici* or *here*) is restricted to cataphorical use. However, in French, the distal *voilà* can also be used to refer cataphorically, as in (46).

(46) a. ... *Voilà/*Voici mes idées sur le sujet*.
       '... There/*Here are my ideas on the subject.'
    b. *Voici/Voilà mes idées sur le sujet:*...
       'Here/*There are my ideas on the subject ...'

This difference may be attributable to differences in markedness in the two languages, non-parallel historical developments of the binary pairs, or the presence of other, semantically similar lexical distinction in the languages (Plauché and Bergen 1999).

iii. The paragon deictic is also similar across the two languages. In English, as in French, indefinite NPs with this sense are preferred, see (47a). In both, there is a particular intonational contour associated with the paragon sense, which is shared by other constructions where a strong category evaluation is made, like those in (47b).

(47) a. *En voilà un/*le chien!*
       'Now there's a/*the dog (for you)!'
    b. *Ça, c'est un chien!*
       'Now that's a dog (for you)!'

The explanation evoked above for paragon *voilà* also applies to paragon *there*. The subset of cases of central *there* that are ambiguous as to whether they indicate the presence of the entity or its category membership are those that have an indefinite or partitive subject.

Despite the fact that *there* and *voilà* emerged separately in the two languages, the three extensions discussed so far are nearly identical. The final four senses of *voilà* outlined in Table 2, however, do not have direct English equivalents.

iv. The conceptual metaphors TIME IS SPACE and POINTS IN TIME ARE POINTS IN SPACE, which we argued (in section 3.3) are responsible for the extension of the central deictic use of *voilà* to the central time sense, are also widely attested in English, as seen in (48).

(48) a. We are on the brink of creating the world's first self-grading exam.
    b. We're still at an early point in our development.

Despite the prevalence of these metaphors in English, *there* is not extended to the domain of time in the way that *voilà* is.

v. Also without an English counterpart is the French now deictic. According to the constructional overlap account provided in section 3.4, the relation between central and now deictic *voilà* is based on the systematic overlap of contexts in which an entity is pointed out as new to the hearer and contexts in which that entity is just arriving in the speech location. Yet, as shown in (49), there is no sense of the *there*-construction that allows this use.

(49)   *Voilà mon frere à la maison!*
        '*There's my brother at home!' [Meaning: 'Now my brother is at home.']

vi. There is no comparable deictic use of *there* for the French stative deictic, which is mapped through STATES ARE LOCATIONS. When we look for the nearest English equivalent of the sentence in (50a), for example, we find that although it is not a full *there*-construction (50b), *there* is used (50c). The *there* in (50c) identifies a new state, just as *voilà* does in the French stative deictic, but does not carry with it the prototypical syntax of the central deictic *there*.

(50)   a.   *Voilà mon frère content.*
             'There's my brother happy.'
        b.   *There's my brother happy.
        c.   There. My brother's happy.

What we may be observing in sentences like (50c) is a metaphorical extension of the deictic locative adverb *there*, rather than the central deictic *there*-construction. *There* has a deictic, demonstrative use external to *there*-constructions which is extended to certain other domains, such as achievement of a new state. Thus, although the central deictic *there*-construction is not extended, unlike central deictic *voilà*, we can still observe the seeds of that extension at work in the extension of demonstrative *there*.

vii. Finally, we turn to the span-of-time deictic, which has no direct equivalent in English. As noted in section 3.6, the French span-of-time construction can take several different fillers in its first slot, with slightly different meanings, as in (51a). English *there* resists being incorporated into the English equivalent of this construction, see (51b).

(51)   a.   *Il y a/Ça fait/Voilà deux ans qu'on s'est marié.*
             'It is/That makes/It's now two years ago that we got married.'
        b.   *There's two years ago that we got married.

On the basis of our analysis of *voilà*, which argued that the span-of-time use of *voilà* is based on a blend between the general span-of-time construction and the now sense of *voilà*, we would predict that it should be impossible to use *there* in such a construction. Since *there* has no now sense, it should not be available to be blended with the span-of-time construction.

4.3.   *English existential* there

While *voilà*-constructions are restricted to various sorts of deixis, *there*-constructions find themselves extended to the domain of existence as well. Examples of existential *there*-constructions like *There's a poodle on the porch* are clearly not deictic because they do not point out the entity. Rather, they identify its location and assert its existence in that location. Existential *there*-constructions diverge in a number of ways from deictic *there* (Lakoff 1987), including their lack of stress on the word *there* (compare [52a] with [52b]) and the possibility of negating existentials (52c), but not deictics (52d).

(52)   a.   There's my *hat*. [Existential]
      b.   *There's* my hat. [Deictic]
      c.   There isn't any food upstairs. [Existential]
      d.   *There isn't a poodle. [Deictic]

Several cognitive accounts have been proposed for the exact nature of the relation between deictic and existential *there*-constructions, including Lakoff's (1987) metaphorical analysis and Johnson's (1998) constructional grounding analysis. The details of the relation between these constructions are not particularly relevant at this point. What is important is that some extension mechanism relates the central deictic and central existential constructions.

Once *there* is used in an existential sense, it can be extended to a number of related existential uses, including those in (53), some of which are from Lakoff (1987).

(53)   English existential *there*-constructions:
      a.   There's the shopping to think about. [Infinitival existential]
      b.   There is a Santa Claus. [Ontological existential]
      c.   There walked into the room a camel. [Presentational existential]
      d.   There's brie and then there's brie. [Evaluative existential]
      e.   There's a man been shot. [Strange existential]

These senses relate to one another through the same mechanisms that connect deictic *there*-constructions, although the specific metaphors,

grounding contexts, and so on differ. A detailed analysis of these relations can be found in Lakoff (1987), and here we will simply outline their expressive and formal characteristics, to allow a comparison with French existentials in section 4.4.

The central *there* existential (52a) is based on the central deictic, and asserts that an entity exists in a mental space (the space of existence) rather than in a location in current physical space. The word *there* is unstressed. The infinitival existential (53a), like the central existential, contains the word *there*, a verb, and the descriptor of an entity located in some space, followed by a gapped infinitival—one which is missing an object. The ontological existential (53b) asserts the existence of the entity in question, and places stress on the verb. The presentational existential (53c) is used in narration with potentially complex VPs in the verb position. The evaluative existential, which is used to assert that some category has a degree of goodness of membership, has coordinate NPs following *there* and a verb. The final coordinate NP is stressed (53d). Finally, the strange existential, which serves to introduce some unexpected event (53e), includes a reduced form of has, rather than *is*, in the verb position, and a final phrasal complement.

Despite the similarities in the way French and English deictic demonstratives pattern, French does not use *voilà*-constructions for any of these existential purposes. Instead, as we will see, French existential constructions center around an unrelated form, *il y a*. Nevertheless, the range and behavior of the French existentials closely parallel those of English existential *there*.

4.4.   *French existential* il y a

The French existential *il y a* 'there is' has a pedigree distinct from that of the French deictic demonstratives. It is a made up of an impersonal subject pronoun, *il*, a locational pro-form, *y*, and a third person inflected form of the verb *avoir* 'to have':

(54)   *Il y a un serpent dans le placard.*
       'There's a snake in the cupboard.'

Il y a displays a radial category of uses. The central, existential sense is extended to various more abstract senses, which deal with time and existence. This section is not a full radial category analysis of *il y a*, but rather an effort to describe how its various senses are structured, so that it can be compared with English *there*.

The existential meaning of the *il y a*-construction is not compositional: the sequence of words *il y a* can also have a literal, non-idiomatic

meaning of 'He/it has there'. This non-idiomatic meaning of the construction suggests a metaphorical motivation for the constructional meaning of *il y a*. Interestingly, though, different metaphors motivate the presence of *y* and *avoir*. The use of *y* suggests the common metaphor EXISTENCE IS LOCATION HERE, which accounts for English *coming into being, going out of existence*, and so on (Lakoff 1987). At the same time, the use of the verb *avoir* in this construction is motivated by the metaphor PROPERTIES ARE POSSESSIONS, which allows attributes to be referred to as possessed objects (Brugman 1981).

The central sense of *il y a* serves to call the attention of the interlocutor to the existence of an entity in some space, as in (55a–b). This function parallels the central sense of *voilà*, with two vital differences. First, *voilà* necessarily places the referent in the physical speech context, and second, *voilà* highlights the act of pointing it out. Thus, for the central case of *voilà* (55c), but not *il y a* (55b), the indicated object must be in the perceptual realm of the interlocutor.

(55) a. *Il y a un serpent dans le placard.*
          'There's a snake in the cupboard.'
      b. *Il y a un serpent.*
          'There's a snake [at some relevant location; default is the current physical context].'
      c. *Voilà un serpent.*
          'There's a snake [in the current physical location; the speaker is pointing it out].'

Unless the location of the entity is specified by a following prepositional phrase as in (55a), the location is understood to be one that is somehow relevant to the discourse. For example, the sentence in (55b) could be uttered out of the blue, in which case the snake is assumed to be located somewhere around the speaker and hearer. The same sentence, when uttered in the context of a discussion of the holdings of a particular zoo would imply that the snake is located in the zoo mentioned.

Not only physical locations, but also other sorts of mental spaces (Fauconnier 1994; Langacker 1987) such as fictional stories (56a), dreams (56b), and times (56c), can be evoked by a following prepositional phrase or assumed as defaults in cases where that prepositional phrase is absent.

(56) a. *Il y a un serpent (dans* Harry Potter*).*
          'There's a snake (in *Harry Potter*).'
      b. *Il y avait un serpent (dans mon reve).*
          'There was a snake (in my dream).'
      c. *Il y aura un serpent (d'ici deux ans).*
          'There will be a snake (within two years).'

Table 3.   *English existential constructions and their French equivalents*

	Construction	English	French
i.	Infinitival existential	*There's the shopping to do.*	*Il y a les courses à faire.*
ii.	Ontological existential	*There is a Santa Claus.*	*Il y a un Père Noël!*
iii.	Presentational existential	*There walked into the room a camel.*	N/A
iv.	Evaluative existential	*There's brie and then there's brie.*	*Il y a brie et brie!*
v.	Strange existential	*There's a man been shot.*	N/A

When *il y a* appears without specifying the space in which it applies, and where the context does not evoke any particular space, there are in fact two possible default interpretations, as shown by (57):

(57)   *Il y a des gens qui croient en Dieu.*
        'There are people who believe in God.'

Example (57) has two possible readings. In the first, there are a number of people in the present location who believe in God, while in the second, there exist people in general who believe in God.

    Just like English existential *there*-constructions, French *il y a*-constructions display a range of related uses. A comparison of these radial categories in the two languages reveals a strong affinity. In section 4.3 we outlined a number of uses of existential *there*-constructions, summarized in (53) and repeated, along with French equivalents where relevant, in Table 3.

  i.   The first extension of *il y a* in Table 3, the French infinitival existential construction, contains a bound infinitival construction (58), just like its English equivalent. The infinitival construction is made up of a NP (which is the object of the *il y a*-construction) and the preposition à "at/to", followed by an infinitival verb, whose object is also the NP of the clause. In cases like (58), there is no physical location. Instead, the direct object noun phrase indicates the existence of a referent and the infinitival indicates the relevant activity.

      (58)   a.   *Il y a trois poules à gagner.*
                  'There are three hens to win.'
             b.   *Il y a les courses à faire.*
                  'There's the shopping to do.'

  ii. A further *il y a*-construction is the ontological existential, which asserts the existence of an entity. As a question, *y at-il* 'is there', which is the normal inversion of *il y a*, is extremely common. As an

assertion, however, the construction in (59c), which uses the verb *exister* 'to exist' is perhaps a more common a way to assert existence. In this ontological use of *il y a*, just as in the English ontological existential the adverb *bien* 'really' is commonly included, as in (59a) and (59b).

(59) a. *Y at-il (bien) un dieu?*
           'Is there (really) a god?'
      b. *Il y a (bien) un père Noël.*
           'There (really) is a Santa Claus.'
      c. *Il existe un père Noël.*
           'There is a Santa Claus.'

iii. Unlike English, however, the function of presentation is expressed using a different construction. French uses the impersonal subject pronoun *il* followed by a verb and its arguments (60a) for this purpose, rather than a past-tense form of the *il y a*-construction (60b).

(60) a. *Il entra un chameau dans la salle.*
           'There entered the room a camel.'
      b. **Il y eut entrer un chameau dans la salle.*
           'There entered the room a camel.'

iv. Like English existential *there*, *il y a* can serve to express a prototypicality judgement. In the evaluative existential, *il y a* is followed by coordinated NPs (61a) or VPs (61b), and is marked with stress on the second coordinated element. The function of this particular construction is to pick out a category, and to express the notion that an ideal case prototype of that category exists (Lakoff 1987).

(61) a. *Il y a champagne et champagne.*
           'There's champagne and then there's champagne.'
      b. *Il y a gagner et gagner.*
           'There's winning and then there's winning.'

v. The final English existential sense shown in Table 3 has no *il y a* equivalent, the nearest match being a past-tense version of the central existential *il y a*-construction, seen in (62). This use does not share the function with the strange existential (*There's a man been shot!*) of identifying the immediacy and unpredictability of the event.

(62) *Il y eut un homme tué.*
       'There was a man killed.'

As is evident from their forms, French and English existentials have quite different origins. French *il y a* existentials are historically unrelated either to English *there* or to deictic *voilà* and *voici*. Yet, as we have shown
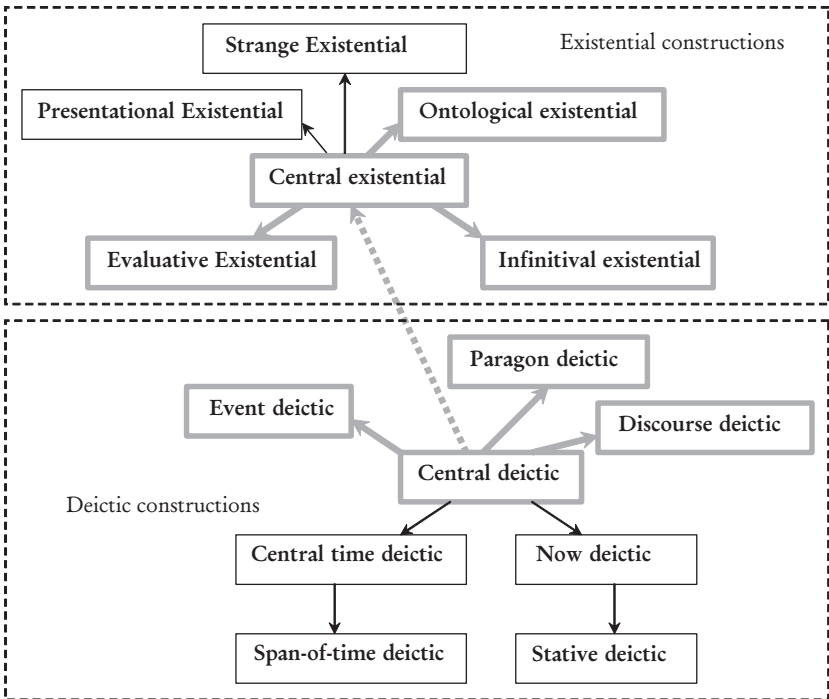
Figure 2.   *English and French deictic and existential constructions*

in this section, striking similarities in the meanings expressed by existentials in the two languages have emerged.

Despite significant overlaps in the properties of their various senses, French and English deictics and existentials differ along one major axis. While a single radial category of constructions (*there/here*) covers both deixis and existence in English, French spreads the burden of these semantic domains over two radial categories of constructions (*il y a* and *voilà/voici*). This is depicted visually in Figure 2. In this figure, which separates existential constructions on the top from deictic constructions on the bottom, those senses with French equivalents formed using the *il y a* or *voilà* constructions are surrounded by a thick gray border. Those with a thin black border have no French *voilà* or *il y a* construction equivalent.

5.   Convergent evolution in linguistic systems

The organization, evolution, development, and functioning of biological systems serve as a common and often apt source domain for technical

and lay notions about language. Radial categories of constructions have a straightforward analog in the domain of biology. Understanding how this biological counterpart develops over time can afford us new ways to conceptualize how and why radial categories of constructions develop over time.

Languages can aptly be understood by reference to organisms because of similarities in their organization, evolution, development, and functioning.

- Languages, like organisms, are complex systems, with functional and semi-independent subparts.
- Languages, like organisms, change over time in a partially random, and partially functionally motivated way, such that separation of groups of individuals may yield differences within the population.
- Languages, like organisms, function in a given environment, which serves to constrain and motivate their functionality, and which helps to define goals and possible action.

Biological species evolve over time, becoming more functionally adapted to the particular ecological environment in which they exist (cf. Mayr 2001 for a general introduction). Some of the best evidence that biological evolution responds adaptively to ecological pressures comes from convergent evolution. Convergent evolution is the frequently observed tendency for organisms living in similar ecological niches to come to resemble one another in their function, and as a result, in their outward appearance, despite having different evolutionary origins. A particularly compelling example is the convergent evolution of placental and marsupial mammals, which diverged from a single common ancestor more than 100 million years ago. Remarkably, parallel species in each family have developed, each of which makes its living in a similar ecological niche. For example (from WGBH/NOVA Science Unit 2001):

- Carnivorous marsupial mice, like placental mice in North America, are small, agile climbers inhabiting low shrubs. They live in dense ground cover and forage at night for small food items. The two mice exhibit similarities in size and body shape, and each group has numerous species.
- Flying phalangers resemble flying squirrels. Both are gliders that eat insects and plants. Both the phalanger and squirrel have skin stretched between forelimbs and hindlimbs to provide greater surface area for gliding from one tree to the next.
- Marsupial moles, like common moles in North America, burrow through soft soil to find and eat insects. The streamlined body shape,

and the modified forelimbs for digging, facilitate an underground, insect-eating way of life. Velvety fur expedites smooth movement through the soil. The fur is white to orange in the marsupial mole and gray in the North American mole.

· The Tasmanian wolf, a carnivorous marsupial resembling the placental wolf, inhabited mainland Australia as well as Tasmania. Its limb bones were long and adapted for running, and the skull and sharp teeth were adapted for tearing meat.

Likewise, linguistic systems develop functional means by which to respond to environmental pressures. A language's environment includes the human cognitive system and the communicative purposes to which it is put. Various sorts of cognitively or functionally motivated linguistic change can be seen as adaptive to the linguistic environment. Included among these types of linguistic change are the creation of new lexical forms for new cultural concepts and the shortening and reduction of frequent words. The development of radial categories of constructions, such as the ones we have discussed, are also examples of such adaptive change.

Just like biological evolution, strong evidence for environmental pressures on linguistic evolution can be found in the convergent evolution of linguistic systems. The degree of overlap between French and English deictic demonstrative and existential constructions in terms of their various meanings, forms, and extension mechanisms can be seen as the product of convergent evolution. Although French and English are genetically related languages, the particular linguistic material conscripted to serve these deictic demonstrative and existential functions differs in the two languages.

One aspect of convergent evolution is particularly relevant to the analogy with the development of radial linguistic constructions. In response to ecological pressures, biological functions evolve in parallel, but are nonetheless merely semi-predictable. For example, flight evolved independently in marsupial flying phalangers and placental flying squirrels, as well as in insects, birds, and lizards in response to the availability of a very valuable ecological niche. Despite its potential value, flight is a relatively rare adaptation, given the number of species in existence that could possible have evolved this capacity. Likewise, the emergence of linguistic tools of expression with pragmatically relevant functions is motivated, but not strongly predictable. In both cases, it is parallel and separate developments that lend credence to the idea that these developments are adaptive.

Convergent evolution in biological species is thought to be facilitated by the multifunctionality of biological systems. The multifunctionality

of biological systems is analogous to the multifunctionality of linguistic constructions found in radial categories like those discussed in this paper. Organs of flight, like other functionally complex organs, do not sprout spontaneously. In addition to the requirement that some ecological niche be available and unoccupied, the organism must already possess material that can be conscripted for an adaptive function. Organisms have a head start if they already possess organs currently serving another purpose which can be adapted to a new function with minor alterations. The emergence of multifunctional organs in response to evolutionary pressure is ubiquitous in the biological world. An example is the canine tongue, which serves not only as an organ of smell and cleaning, but also as a cooling device, through the evaporation of saliva.

The expansion of the uses of linguistic material through extension mechanisms such as metaphor, blending, and constructional grounding similarly produces multifunctional linguistic units. As we have seen in the case of French deictics, the original function of *voilà*, pointing out an object, has been extended to include pointing out an event, expressing a paragon judgment, and indicating discourse events. The result is a component of the linguistic system that cannot be defined in unitary functional terms, and whose multiple functions have arisen as the product of environmental pressures.

In the biological organism, environmental pressures involve such life-and-death matters as finding sustenance, escaping predators, finding mates, and rearing young. In the linguistic system, pressures come from the needs to produce language quickly, to recognize it easily, and to communicate important aspects of the human experience. It is to fulfill these needs that certain among the many possible extensions to new functions in biological and linguistic systems are realized and preserved. The various functions of deictics and existentials may well be counted among those essential functions of language that any language will find linguistic material for. Other, less vital functions might not be subject to such convergent evolution across languages.

To sum up, biological organisms' functional organs, dedicated to particular purposes, are often recruited over time to play new roles and thus meet ecological demands. We can confirm the effects of these pressures through the biological phenomenon of convergent evolution. The radial categories of English *there* and *here* and French *voilà*, *voici*, and *il y a*, like radial categories in general, result from a similar process—one in which a linguistic unit acquires new functionalities while retaining its original purpose so as to fill new functional niches. This results in multifunctional linguistic constructions, the developmental paths of which

have converged cross-linguistically to map out similar semantic spaces through parallel developments.

Received 10 January 2000   *University of Hawai'i at Manoa*
Revision received March 2003   *University of California at Berkeley*

Notes

*   Authors' e-mail addresses: ⟨bergen@hawaii.edu⟩; ⟨mcp@socrates.berkeley.edu⟩.
1.   This sentence would only be felicitous in a metalinguistic sense, where the second speaker confirms that the first speaker has produced an utterance, and could be roughly glossed as 'Yes, I know that you are saying something'. However, it is not possible to respond with *Oui, je sais* to the directive itself in an imperative.
2.   Just as with expressions of objects in the central deictic, events are not anchored exclusively to the present perceptual space but, rather, can exist in alternative mental spaces, such as in a narrative: *Voilà que nous sommes dans la forêt* 'There we are in the forest'.
3.   This sentence might be used to introduce a children's television show during the theme song.

References

Barnes, Betsy
    1985   *The Pragmatics of Left Detachment in Spoken Standard French*. Amsterdam: Benjamins.
Bergen, Benjamin K. and Madelaine C. Plauché
    2001   *Voilà voilà*: Extensions of deictic constructions in French. In Cienki, Alan, Barbara Luka, and Michael Smith (eds.), *Conceptual and Discourse Factors in Linguistic Structure*. Stanford: Center for the Study of Language and Information (CSLI), 45–61.
Bouchard, Denis
    1988   French *voici/voilà* and the analysis of pro-drop. *Language* 64, 89–100.
Brugman, Claudia
    1981   Story of *over*. M.A. thesis, University of California, Berkeley. Available from the Indiana University Linguistics Club.
Brunot, Ferdinand and C. Bruneau
    1969   *Précis de grammaire historique de la langue française*. Paris: Mosson.
Damourette, Jacques and Edouard Pichon
    1927   *Des mots à la pensée: Essai de grammaire de la langue française*. Paris: d'Artrey.
Diessel, Holger
    1999   *Demonstratives. Form Function and Grammaticalization*. Amsterdam: John Benjamins.
Fauconnier, Gilles
    1994   *Mental Spaces: Aspects of Meaning Construction in Natural Language*. Cambridge/New York: Cambridge University Press.
Fauconnier, Gilles and Mark Turner
    1996   Blending as a central process of grammar. In Goldberg, Adele (ed.), *Conceptual Structure, Discourse, and Language*. Stanford: Center for the Study of Language and Information (CSLI), 113–129.

2002   *The Way We Think: Conceptual Blending and the Mind's Hidden Complexities.* New York: Basic Books.

Fillmore, Charles
1997 [1971] *Lectures on Deixis.* Stanford: Center for the Study of Language and Information (CSLI).
1998   Inversion and constructional inheritance. In Webelhuth, Gert, Jean-Pierre Koenig, and Andreas Kathol (eds.), *Constructional and Lexical Aspects of Linguistic Explanation.* Stanford: Center for the Study of Language and Information (CSLI), 113–128.

Girault-Duvivier, Charles Pierre
1851   *Grammaire des grammaires, ou Analyse raisonnée des meilliers traites sur la langue française.* Paris: A. Cotelle.

Goldberg, Adele
1995   *Constructions: A Construction Grammar Approach to Argument Structure.* Chicago: Chicago University Press.

Grenoble, Lenore and Matthew Riley
1996   The role of deictics in discourse coherence: French *voici/voilà* and Russian *vot/von. Journal of Pragmatics* 25, 819–838.

Grévisse, Maurice
1970   *Le bon usage: grammaire française.* Gembloux: J. Duculot.

Janda, Laura
1990   The radial network of a grammatical category—its genesis and dynamic structure. *Cognitive Linguistics* 1 (3), 269–288.

Johnson, Chris
1998   Constructional grounding: On the relation between deictic and existential *there*-constructions in acquisition. Paper presented at the Fourth Conference on Conceptual Structure, Discourse, and Language (CSDL-4), Emory University, Atlanta, GA.

Jones, Michael A.
1996   *Foundations of French Syntax.* Cambridge: Cambridge University Press.

Lakoff, George
1987   *Women, Fire and Dangerous Things.* Chicago: University of Chicago Press.
1993   The contemporary theory of metaphor. In Ortony, Andrew (ed.), *Metaphor and Thought.* Cambridge: Cambridge University Press, 202–251.

Lakoff, George and Mark Johnson
1980   Metaphors We Live By. Chicago: University of Chicago Press.

Lambrecht, Knud
1981   Topic, focus, and the grammar of spoken French. Unpublished Ph.D. dissertation, University of California at Berkeley.

Langacker, Ronald
1987   *Foundations of Cognitive Grammar*, vol. 1: *Theoretical Prerequisites.* Stanford, CA: Stanford University Press.
1991   *Concept, Image, and Symbol: The Cognitive Basis of Grammar.* Berlin/New York: Mouton de Gruyter.

Lindner, Susan
1981   A lexico-semantic analysis of verb-particle constructions with *up* and *out.* Ph.D. dissertation, University of California at San Diego.

Matushansky, Ora
1998   Le sujet nul à travers les langues: pour une catégorie vide unique. Ph.D dissertation, Université Paris-8.

Mayr, Ernst
    2001   *What Evolution Is.* New York: Basic Books
Moignet, Gerard
    1969   Le verbe *voici-voilà. Travaux de Linguistique et de Littérature* 7, 189–201.
Moore, Kevin
    1998   Deixis and the "front/back" component of temporal metaphors. Paper presented at the Fourth Conference on Conceptual Structure, Discourse, and Language (CSDL-4), Emory University, Atlanta, GA.
Nyrop, Kristoffer
    1914   *Grammaire historique de la langue française.* New York: Stechert.
Plauché, Madelaine C. and Benjamin K. Bergen
    1999   Markedness and the evolution of binary spatial deictics: French *voilà* and *voici.* In Chang, Steve, Lily Liaw, and Josef Ruppenhofer (eds.), *Proceedings of the 25th Annual Meeting of the Berkeley Linguistics Society.* Berkeley: Berkeley Linguistics Society.
Smith, Tomoko
    1997   How "give" and "receive" provide structure for abstract notions: The case of benefactives, adversative, causatives, and passives. In Bergen, Benjamin K., Madelaine C. Plauché, and Ashlee Bailey (eds.), *Proceedings of the 24th Annual Meeting of the Berkeley Linguistics Society.* Berkeley: Berkeley Linguistics Society, 219–231.
Sweetser, Eve
    1990   *From Etymology to Pragmatics.* Cambridge: Cambridge University Press.
Van Oosten, Jeanne
    1986   *The Nature of Subjects, Topics, and Agents: A Cognitive Explanation.* Bloomington, IN: Indiana University Linguistics Club.
WGBH/NOVA Science Unit
    2001   *Evolution: A Journey into Where We're from and Where We're going.* Boston: WGBH Educational Foundation and Clear Blue Sky Productions. URL: ⟨http://www.pbs.org/wgbh/evolution/⟩.