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A Modern Synthesis: The Fillmorean Construction and its Hidden Lineage

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Abstract

Understanding where an idea comes from is essential to understanding what it is – and what it might become. Almost 40 years ago, Charles J. Fillmore and his collaborators proposed what was, at the time, a grammarian's gambit: that the primitive units of grammars are not abstract principles, as in mainstream theories of the day, but more like the traditional notion of a *construction* – a pairing of form and function. This "Fillmorean" reinterpretation of the construction has since inspired a vibrant and diverse research programme. Yet despite its success, the deeper intellectual lineage that shaped Construction Grammar has largely remained implicit; and recovering that lineage offers a clearer view of the field's history, its current assumptions, and its future possibilities. This paper contributes to that goal by tracing how the Fillmorean construction is rooted not only in traditional grammars, but also in American descriptivism and even in the formal architecture of generative syntax. Seen in this light, Fillmore's proposal appears as a modern synthesis of earlier traditions – integrating long-scattered insights into a unified, usage-based account of grammar.

1 Introduction

Charles J. Fillmore, or *Chuck* as his friends and colleagues would call him, considered himself to be an OWL: just another Ordinary Working Linguist (Lakoff 2014). Many scholars in our field, however, will agree that his enormous impact has earned him a place in the pantheon of linguistics. Notions from his Case Grammar (Fillmore 1968) have permeated virtually every linguistic theory, and with Frame Semantics (Fillmore 1976) he pioneered one of the most influential approaches to lexical meaning. This paper concerns what is perhaps his biggest idea of all: that *all* of linguistic knowledge can be represented as conventional mappings between form and function, called **constructions** (Fillmore 1988).

The constructional idea struck such a vein in the wider linguistics community that many of its principles were soon embraced by a wide variety of disciplines, giving rise to a vibrant and pluralistic research community (Fried & Östman 2004). Yet despite this rapid evolution, the deeper intellectual lineage that shaped Construction Grammar has largely remained implicit. This is unfortunate, as clarifying the origins of the Fillmorean construction can help to ground contemporary

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research into the broader history of linguistic thought; to illuminate the community's current assumptions and debates; and to orient its future development.

This paper aims to contribute to that effort by tracing the history of ideas that led to the earliest publications on Construction Grammar. This archeological journey reveals that Fillmore's reinterpretation of the construction was not only inspired by pedagogical and traditional grammars, but also – perhaps even more demonstrably so – by the innovations of American descriptivism and generative syntax. Though rarely foregrounded, these influences form an essential part of the conceptual foundations on which Construction Grammar was built.

Before we begin on our journey, one caveat is in order: the constructional idea is far too multifaceted to be fully captured in a single article. This paper, therefore, only offers one chapter in a broader narrative that calls for multiple perspectives and voices. It is itself part of a larger book project on the constructional idea (van Trijp in prep.). More concretely, the focus here is on the prehistory of the Fillmorean construction and its early formalization – touching only briefly on topics such as constructional meaning, usage and interpretation, and language emergence.

2 A Strip of Fertile Land

Ideas never come into the world fully fledged, but they develop over time. As such, they start out like young seedlings that need fertile soil, water and sunlight in order to grow. Likewise, Fillmore's idea could not have emerged just about anywhere, especially not in the linguistic landscape of the 1980s that was largely barren to the notion of a construction. As George Lakoff (1987: 467) stated in his book *Women, Fire, and Dangerous Things*:

> "It should be pointed out the concept *grammatical construction* is extremely controversial in contemporary linguistics. In most contemporary formal theories, grammatical constructions in our sense have no status whatever. They are considered epiphenomena–consequences of more general rules of a very different character."

The reigning monarch among those contemporary theories was *Government and Binding Theory* (GB; Chomsky 1981). The principal goal of GB, and that of the larger field of generative linguistics that Noam Chomsky had established in the decades prior, was to uncover the nature of the human capacity for learning language. Many linguists took a strong nativist stance and conjectured that humans must be born with innate knowledge about language, largely because of what Chomsky (1980: 34) had dubbed "the argument of the poverty of the stimulus". This argument roughly goes as follows: the linguistic input that children observe is not rich enough to allow them to learn the complex structures of their language, so they must be genetically wired for doing so.[1]

[1] The argument of the Poverty of the Stimulus has a complex history. See Thomas (2002) for a historical account, and Pullum & Scholz (2002) for an empirical assessment.

The argument of the Poverty of the Stimulus is trivially true in the sense that even if you would talk to an animal as much as parents talk to their children, it would still never be able to use your language like you do; so humans must have *something* that gives us this capacity. Many bookshelves have been filled with studies about what that something might be, but the main hypothesis within the Government and Binding framework (often referred to as the *Theory of Principles and Parameters*) was that this innate endowment is a kind of *Universal Grammar* (UG) that consists of a rich set of both fixed and parametrisable principles (Chomsky 1981; Chomsky & Lasnik 1993).

Fillmore and his colleagues weren't opposed to this quest for Universal Grammar itself, but rather with how Chomsky used it for justifying a **core-periphery distinction** in linguistic theorizing. Chomsky (1981) argued that linguists should focus on "core grammars" of systematic rules because only those were seen as relevant for discovering something useful about UG. Structures that didn't meet the core criteria core were considered to be the "periphery" of language and therefore of secondary interest. To quote Chomsky (1981: 7–8) directly:

> "When the parameters of UG are fixed [...], a particular grammar is determined, what I will call a "core grammar." [...] Furthermore, each actual "language" will incorporate a periphery of borrowings, historical residues, inventions, and so on, which we can hardly expect to – and indeed would not want to – incorporate within a principled theory of UG. For reasons as these, it is reasonable to suppose that UG determines a set of core grammars and that what is actually represented in the mind of an individual [...] would be a core grammar with a periphery of marked elements and constructions."

In other words, Chomsky (1981: 3) introduced the core-periphery distinction as an attempt to solve the problem that a theory of Universal Grammar "must be compatible with the diversity of existing (indeed, possible) grammars". Linguists were quite optimistic about the possibility of formulating such a theory, since language typologists had already identified a series of recurrent trends across the world's languages, which are known as *typological* or *Greenbergian universals* (named after the late Joseph Greenberg, see for instance Greenberg 1963).

However, typological universals are *tendencies* rather than the strict *laws* that Chomsky was arguing for. As a result, the proposed core-periphery distinction soon became controversial. To some, it was a sensible move that helped to scope the theory by prioritizing certain empirical facts. For others, however, this selectivity felt unsatisfying. To continue Lakoff's earlier quote (1987: 467):

> "[G]rammatical constructions are left out of other contemporary formal theories not for any empirical reasons, but for reasons internal to those theories. Those theories are very much the poorer for it. Theories of grammar without grammatical constructions simply do not account for anything approaching the full range of grammatical facts of any language. In fact, they are limited to a relatively small range of phenomena."

Dissatisfaction with the core-periphery distinction was not the only motivation for Fillmore's constructional turn, nor was it even the most important one (which concerns *meaning*, see van Trijp in prep.). Still, the narrowing empirical coverage persuaded many linguists that the quest for a highly abstract model risked leaving too much of language in the shadows. By placing constructions at the center of linguistic theory, Fillmore's proposal promised not only to bring those peripheral patterns back into the light, but to reimagine them as integral to our understanding of language.

Fillmore had already developed a soft spot for such patterns at a young age while growing up in St. Paul, Minnesota. Ironically enough, the boy who would later become one of the world's greatest linguists was convinced that he "personally had difficulties with language" because he was "tongue-tied" and "could never think of anything to say" (Fillmore 2012: p. 701). At around the age of fourteen, he asked a local librarian for help, and she found him a book called *5000 Useful Phrases for Writers and Speakers*. Ever since that day, he would keep a collection of phrases that he would find memorable or handy to keep in mind, and experienced first-hand that you need to remember many ready-made phrases to become a proficient language user.

After this initial encounter with language, his work and interests would lead him all across the world to Japan and back to the United States, until he ended up at the American West Coast. There he was fortunate enough to find a strip of high-yielding land for his ideas at the Cognitive Linguistics Program at the University of California at Berkeley, where he would also frequently meet with computer scientists and Artificial Intelligence researchers from the San Francisco Bay Area (Fillmore 2012).

The Berkeley linguists would tackle especially those structures that were thought of as irregular, idiomatic, or non-systematic. Together with his colleagues Paul Kay and George Lakoff, Fillmore would also teach courses where he would challenge students to examine "peripheral" patterns more closely, such as the ones illustrated in example (1), quoted from Fillmore (2013: p. 111).

(1) a. What, me, get married?
b. The harder I try, the less I accomplish.
c. I wouldn't touch it, let alone eat it.
d. What's that flag doing at half mast?

As it turned out, these peripheral patterns were not so peripheral after all, but rather frequent and even central to linguistic communication. Just take a look at the opening sentence of this section alone, which largely consists of ready-made chunks such as "come into the world", "fully-fledged" and "develop over time", which all return millions of hits when you search them on the internet.[2]

[2] A rough internet search performed on October 16, 2023, gives 82.100.000 hits for "come into the world" (with 299.000.000 hits for the phrase "come into X"), more than 11 million hits for "fully fledged" (with the adjective "full-fledged" reaching almost 42 million hits), and almost 4 million hits for "develop over time" (and a whopping 1.610.000.000 hits for the phrase "over time").

A close inspection of such phrases reveals that it is not enough to describe a language as the sum of "lexicon + rules + exceptions." Or as Fillmore et al. (1988: p. 534) conclude in their seminal paper on the "*let alone*"-construction:

> "Those linguistic processes that are thought of as irregular cannot be accounted for by constructing lists of exceptions: the realm of idiomaticity in a language includes a great deal that is productive, highly structured, and worthy of serious grammatical investigation."

3 A Prehistory of the Fillmorean Construction

Fillmore et al. (1988: 501) were convinced that the same machinery that was needed for analyzing the periphery could also be applied to core grammars, and claimed that "the proper units of a grammar are more similar to the notion of construction in traditional and pedagogical grammars than to that of rule in most versions of generative grammar". Fillmore would dub the theory that explores this claim **Construction Grammar**.

3.1 A Time-Honored Tradition?

But what exactly is a "construction" in such traditional grammars? Martin Haspelmath (2023), who has dedicated a lot of his work to sharpening our linguistic terminology, observes that the term *construction* is nowadays frequently used for referring to particular syntactic patterns, such as the "passive construction". According to Haspelmath, however, this modern usage only started to gain traction from the 1970s onwards, and the term "construction" only rose to prominence as Construction Grammar became more influential.[3]

When it appears in older texts, the word *construction* is typically a nominalization that retains a procedural interpretation such as "constructing a complex form" or "constructing a sentence." In this sense, it is similar to "syntax" as "an abstract noun referring to the regularities of word combination" (Haspelmath 2023: 3), though subtle distinctions can be found as well. One example is the pedagogical book *Practical Lessons on the Comparative Construction of the Verb in the French and English Languages* (Festu 1863: p. vi):

> "Now, Syntax is one thing and Construction another. The one simply teaches the concordance of words in their various accidents; whereas, Construction shows how to shape, build, and cement those words together in the rendering of our thoughts."

This distinction indicates that the term "construction" was sometimes seen as something more concrete and meaningful than the abstract concept of *syntax*, which could explain why the term's current usage as a meaningful pattern started to pop up alongside its procedural interpretation.

[3] Haspelmath (2023: 3) does note that the term goes back to the 12th Century, "where Latin *con-structio* was apparently a loan translation of Greek *syn-taxis* (cf. Kneepkens (1990)."

For example, Festu (1863) writes about "the infinitive construction" (p. 3), "the Impersonal construction" (p. 35) and "the Indicative construction" (p. 95). These labels can sometimes be read in the procedural sense and sometimes in the patterns sense. Instances of the latter can be attested frequently enough in other traditional and pedagogical grammars of the 19th Century to assume that it was a common phrase among linguists.[4]

The following quote, taken from a pedagogical book called *Advanced Lessons in English Composition, Analysis, and Grammar*, illustrates a usage that only permits the constructions-as-patterns reading (Murray 1886: 258):

> "A transitive verb is said to be in the *passive* construction when its past participle is a predicate complement to the different tenses or tense phrases of the verb *be*".

However, despite numerous attestations in traditional texts, Haspelmath's observation still stands that the modern usage of the word "construction" was far less common than it is today, and it seems more likely that Fillmore's ideas were more profoundly shaped by the various definitions that circulated in American descriptivism (also known as American structuralism), which were already "generalizations of what is meant in traditional grammar by such expressions as 'the ablative absolute construction'" (Wells 1947: p. 93).[5]

3.2 Cementing Relationships

The story of American descriptivism is a very exciting one that has already been documented in-depth by Hymes & Fought (1975), so here we'll concentrate on four thinkers whose ideas have left the biggest impact on how we conceive of constructions today: Franz Boas, Edward Sapir, Leonard Bloomfield, and Kenneth L. Pike.

Franz Boas: Linguistic Relativism

We will start with Franz Boas, a towering figure in the history of anthropology and linguistics, particularly in the study of the indigenous languages of America. The description of these languages had revealed that the methods developed for analyzing Indo-European languages could not simply be carried over to other languages. Boas therefore put forward "the concept of linguistic relativism, that is, that each language had to be studied in and for itself. It was not to be forced into a mold that was more appropriate to some other language" (Haas 1976: 60).[6]

[4] This sense of a "construction" also pops up in the descriptive grammars of American languages that Fillmore was familiar with. For instance, the influential *Handbook of American Indian Languages* (Boas 1911a) includes a couple of dozen of instances in this sense.

[5] I avoid "structuralism" because it is a bit of a misnomer for this movement: American linguists who are now labeled "structuralist" regarded themselves rather as "descriptivist", or at least did not think of descriptivism and structuralism as two opposite terms. For a discussion on the term "structuralism" in this context, see Hymes & Fought (1975: p. 8–11).

[6] Boas summarized his views in his introduction to the first volume of the *Handbook of American Indian Languages* (Boas 1911b), which is still an important read today.

It is hard to overestimate just how innovative this view was (or even *is*). It not only reminds us that each language should be approached on its own terms (Haspelmath 2009; Croft 2010), but also offered a new perspective at a time when most of linguistics was focused on the *comparative method* in which two or more related languages are compared to each other to reconstruct the features of their shared ancestor. Due to a lack of data, this method could not be applied to the languages of America.[7] Leonard Bloomfield, who would become even more influential, later credited Boas for having created the scientific foundations for descriptive linguistics (1943: 198):

> "Perhaps his greatest contribution to science, and, at any rate, the one we can best appreciate, was the development of descriptive language study. The native languages of our country had been studied by some very gifted men, but none had succeeded in putting this study upon a scientific basis. The scientific equipment of linguists, on the other hand, contained few keen tools except the comparative method, and this could not yet be here applied."

Edward Sapir: Attention to Meaning and Culture

Boas had a big impact on his most prominent student, Edward Sapir, who was an anthropological linguist as well and who is widely remembered as one of the most important figures in our field's history. Sapir would most faithfully continue the Boasian research programme, make great contributions to comparative and general linguistics, and mentor a new generation of influential linguists and anthropologists. Like Boas, he was strongly interested in the relation between language, meaning and culture, which was heavily reflected in his work.[8]

Sapir's influence on the constructional idea is more conceptual than formal, and therefore more difficult to appreciate. Sapir pioneered the view that language is inseparable from meaning, culture, and human experience. He treated grammar as a living, expressive medium – capable of reflecting the conceptual categories and communicative needs of its users.

In its commitment to pairing form with function, Construction Grammar echoes Sapir's belief that linguistic structure cannot be divorced from interpretation. This disproves a persistent misunderstanding that early Construction Grammar was incompatible with usage-based approaches (van Trijp 2025). In reality, Fillmore's insistence on describing linguistic knowledge as usage conventions, modelling idiomaticity, and treating constructions as meaningful wholes resonates deeply with Sapir's holistic, culturally grounded view of language.

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7 Moreover, many (racist) stereotypes existed about these languages and their speakers.

8 Boas and Sapir were of course not the only ones to notice this relation. Several thinkers had already expressed similar ideas in the 19th century, among whom Wilhelm von Humboldt (Brown 1967). Sapir would later become associated with the "Sapir-Whorf hypothesis", named after himself and his student Benjamin Lee Whorf, which explores the idea that an individual's language has an impact on their thoughts. It is now widely accepted that the name "Sapir-Whorf hypothesis" is misleading: Sapir never espoused the view that language determines thought, and even Whorf did not believe in strict *linguistic determinism*.

Leonard Bloomfield: Systematizing the Description of Constructions

We now turn to another giant of our past: Leonard Bloomfield, whose impact on virtually every branch of linguistics is so undeniable that it stares you right in the face. Bloomfield did not formally study under Boas, but often interacted with him and considered him as a mentor (Haas 1976). He therefore initially followed a similar path by describing and comparing several American languages. He was also keen to explore the relation between language and mind, and therefore took a *mentalist* approach in his book *An Introduction to the Study of Language* (1914) in which he argued that linguistic phenomena could only be correctly understood by taking their mental (or cognitive) basis into account (p. 71).

However, Bloomfield's quest for scientific rigour would take him into a different direction as he became more and more concerned about *observation bias*. His own work and the linguistic-cultural relativism of Boas had taught him that there exists not only great diversity between different languages, but also between the cultures in which those languages were used. What is considered to be meaningful or relevant in one culture, may not be so in another. Bloomfield realized that this posed a problem: linguists are not neutral observers, but people who are situated in a specific culture themselves. This means that even the most accomplished linguist has unconscious biases, which is equally true for the language users with whom they work. So how is it possible to interpret a linguistic fact in the same way as understood by people from a different culture?

Since the workings of the human mind cannot be observed, Bloomfield's solution was to reject the mentalist view of his earlier work, and to stick as close to the observable data as possible. In his groundbreaking book *Language* (1933), he proposed a *mechanistic* model instead, arguing that a linguistic observer should stick to "reporting the facts" without appeal to the mind (p. 38). He therefore sought ways to make linguistic descriptions more neutral, which led to two models of grammatical description that we would nowadays qualify as *procedural* and *declarative*.

A procedural description implies a process. For example, the term *suffixation* describes a morphological process in which a suffix is attached to a base morpheme, like *baked* is formed by attaching the suffix *-(e)d* to *bake*. The procedural model of description was introduced to the US by Franz Boas, who borrowed terminology from historical linguistics for the budding field of language description (Hockett 1954: 211). Since historical linguists focus on language change, they naturally use process-oriented terminology, which carried over into the "grammatical processes" described by Boas (1911b: 27), Sapir (1921: Ch. 4), and their students.

Bloomfield and other American descriptivists grew uneasy with the implicit commitments of such process-based descriptions (Hockett 1954: 211). For example, Hockett writes that given the example of *baked*, "it is impossible not to conclude that some kind of priority is being assigned to *bake*, as against either *baked* or the suffix" (p. 211). Other linguists might have proposed different procedures that would lead to the same observable outcome, for instance that *baked* is formed by appending the stem *bake* to the English past-tense morpheme; or

that new past tense forms are obtained through analogical reasoning over exemplars; or that there is a competition between procedures. Since the actual mental processes of language production and comprehension cannot be observed, the linguist has to make ad-hoc decisions about both the kinds of processes that are involved, and how they are executed.

Bloomfield's alternative was a *declarative* approach: instead of stating *how* a structure is formed (procedural), he proposed to describe *what* can be observed: the "arrangement" of linguistic items – without making any claims about how a language user would go about and produce them. For example, instead of describing the form *baked* as the result of suffixation, a declarative model simply states that *baked* consists of *bake* and *-(e)d*. The particular model that Bloomfield pioneered, and that other structuralists would elaborate upon (Wells 1947), would become known as **Immediate Constituent Analysis** (Bloomfield 1933: 160–161).[9]

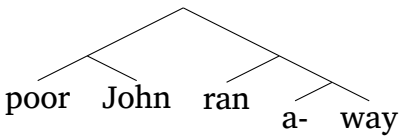
Bloomfield's Immediate Constituent Analysis involves two kinds of linguistic forms: simple forms (or morphemes); and complex forms, which consist of *constituents*. He presents the example *poor John ran away*, which consists of five "ultimate" constituents: *poor*, *John*, *ran*, *a-* (a bound morpheme that occurs in a-adjectives such as *ashore* and *adrift*) and *way*. "However," Bloomfield argues, "the structure of complex forms is by no means as simple as this; we could not understand the forms of a language if we merely reduced all the complex forms to their ultimate constituents" (ibid., at p. 161). Instead, he argues that there is a hierarchy of *immediate* constituents: the immediate constituents of *poor John ran away* are *poor John* and *ran away*, which themselves are complex linguistic forms composed of immediate constitents.

Example (2) illustrates how the complex form *poor John ran away* is gradually decomposed into its immediate constituents, while example (3) shows the same analysis but as an unlabeled tree that resembles more closely the kinds of representations that most linguists are familiar with today.

(2)

<table>
<tr><td colspan="5">poor John ran away</td></tr>
<tr><td colspan="2">poor John</td><td colspan="3">ran away</td></tr>
<tr><td>poor</td><td>John</td><td>ran</td><td colspan="2">away</td></tr>
<tr><td colspan="3"></td><td>a-</td><td>way</td></tr>
</table>

(3)



Here is where things get really interesting. Bloomfield (1933: 169) defined a *construction* as a regular pattern that cements a relationship between two constituents.[10] Or more precisely:

[9] The idea of constituent structure dates back to the German psychologist Wilhelm Wundt. Bloomfield (1914) explicitly acknowledges his allegiance to Wundt's work.

[10] A phrase that was regularly used was to say that two or more immediate constituents "stand in a construction", see for instance Hockett (1954).

> "Whenever two (or, rarely, more) forms are spoken together, as constituents of a complex form, the grammatical features by which they are combined, make up a *construction*. Thus, the grammatical features by which *duke* and *-ess* combine in the form *duchess*, or the grammatical features by which *poor John* and *ran away* combine in the form *poor John ran away*, make up a construction."

The first thing to note in this definition is that Bloomfield considered constructions to be involved both in the formation of complex morphemes such as *duchess* (an arrangement of bound morphemes) as well as of phrases such as *poor John* (an arrangement of unbound morphemes). Secondly, Bloomfield (1933: 184) wrote that even syntactic constructions are *meaningful*:[11]

> "The free forms (words and phrases) of a language appear in larger free forms (phrases), arranged by [grammatical features] of modulation, phonetic modification, selection, and order. Any meaningful, recurrent set of such [grammatical features] is a *syntactic construction*."

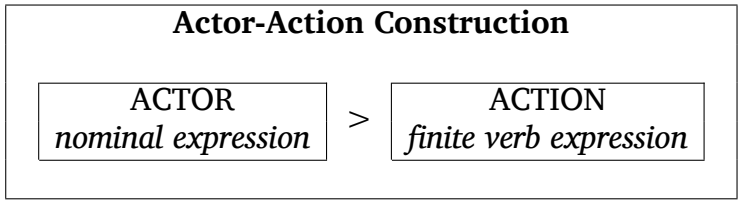
Bloomfield (1933: 184–185) illustrates his definition of a syntactic construction through what he called "the English actor-action construction", which underlies phrases such as *poor John ran away* or *Bill ran*. He notes that this construction mainly combines the grammatical features "selection" and "order": the construction selects two constituents (nominal expressions such as *poor John*; and finite verb expressions such as *ran away*), and it orders the nominal expression before the verbal one. Bloomfield (1933: 185) characterises the meaning of the construction as "whatever is named by the substantive expression is an actor that *performs* the action named by the finite verb expression." Finally, he provides the following structural description of the construction:

> "The two immediate constituents of the English actor-action construction are not interchangeable: we say that the construction has two *positions*, which we may call the positions of *actor* and *action*. Certain English words and phrases can appear in the actor position, certain others in the action position. The positions in which a form can appear are its *functions* or, collectively, its *function*."

Example (4) offers a schematic representation of the Actor-Action construction following Bloomfield's description. Since Bloomfield (1933: 161) wrote that constituents are "*contained within* (or to be *included in* or *enter into*) the complex forms", I opted for a boxed diagram loosely inspired by Construction Grammar's recognizable "boxes-within-boxes" notation.

[11] A widespread misconception of Bloomfield's work is that he denied the importance of meaning. In reality, Bloomfield (and other structuralists such as Zellig Harris) only excluded meaning from their descriptive methods because they had no objective way of describing meaning, apart from the behaviouristic notions of stimulus-response that can be observed in situated interactions between a producer and comprehender.

(4)



The American descriptivists proposed several variations of this definition (Wells 1947), but they all treated a construction as a local relation between a complex form and its immediate constituents. Constructions were therefore increasingly seen as more than just the patterns: they became the **building blocks** of a sentence – a view clearly expressed by Hockett (1954: 215), who wrote that all grammatical arrangements of a language could be described in terms of constructions:

> (1) A list of the constructions.
> (2) Under each construction,
> (2.1) An enumeration of the positions in that construction.
> (2.2) A specification for any marker for that construction.
> (2.3) For each position,
> (2.31) A list of the morphemes which occur there, and
> (2.32) A list of the constructions, composite forms belonging to which occur there.

Hockett (1954: 217) wrote about this plan:

> "A grammatical description built according to the plan outlined [above] sets forth principles by which one can generate any number of utterances in the language; in this sense, it is comparable to the structure of that portion of a human being which enables him to produce utterances in a language; i.e., to speak. It is also comparable to a cookbook. From the lists [... of constructions], choose any set of compatible ingredients. Put them together, two by two or few by few [(Immediate Constituents)], until all have tentatively been assembled [...]."

Hockett's statement comes eerily close to both Fillmore's idea that a "grammatical formalism can be constructed [...] which is built exclusively on grammatical constructions" (Fillmore 1988: 54), as well as Chomsky's proposal that a grammar is "a device that generates all of the grammatical sequences" of a language (Chomsky 1957: 2).

Kenneth L. Pike: An Insider's Perspective

It is hard to overstate how much Bloomfield's work has impacted American linguistics. His methodological rigour inspired a whole school of thought that would soon eclipse the more intuitive approach of Edward Sapir – though as we mentioned earlier, Sapir's vision remained an undercurrent that has become increasingly important as Construction Grammar evolved.

But to get back to our journey, we have arrived in the 1950s, by which Bloomfield's *Language* (1933) had become a foundational text, fuelling what Charles Fillmore later described as a "movement [...] toward making linguistics more "scientific" by designing so-called discovery procedures for linguistic analysis" (Fillmore 2012: 704).

At the time, Fillmore was stationed with the US army in Kyoto, Japan; but he was keeping tabs on these developments from afar, and he "wanted to be part of" them (p. 704). So he returned to the United States and enrolled in the linguistics program at the University of Michigan in Ann Arbor, where he would also encounter Kenneth L. Pike, who is undoubtedly one of the most underappreciated figures in the grand narrative of modern linguistics.

Pike (1967) was working on *Tagmemics* – a Bloomfield-inspired theory that treated language as embedded in human behavior. In this grammatical model, sentences were built from *tagmemes* – pairings of *functional slots* (like a subject position) and *class fillers* (such as a noun phrase).[12] Just as in Bloomfield's work, *constructions* appear as templates for arranging these elements into coherent grammatical patterns. And as most other American descriptivists, Pike saw constructions as deeply embedded in larger patterns of human behaviour.

As Fillmore (1989: 19–20) later observed, Construction Grammar "resembles [... Tagmemics] "with its slots, fillers, conditions, and roles, and its inherent engagement in the behavior and purposes of human beings." In a sense, early Construction Grammar could be seen as *Tagmemics with a twist*: instead of treating tagmemes – the slots – as the basic units of language, Fillmore placed the **construction itself** at the foundation.

But Pike's most profound influence on Construction Grammar – and linguistics at large – was arguably conceptual rather than structural: **the distinction between *etic* and *emic* levels of analysis**. Most linguists know this distinction from phonetics and phonology. A phonetician observes speech sounds "from the outside" – identifying, for instance, the difference between a uvular trill /ʀ/ and a dental trill /r/. By contrast, a phonologist adopts "an insider's perspective", and notes, for instance, that for speakers of Dutch, these are just two variants – *allophones* – of the same underlying phoneme /r/. That is, even though they are different in terms of neutral measurement criteria, they are subjectively *interpreted* as the same sound.

Pike extended the etic-emic distinction across all domains of cultural and linguistic description. An *etic* unit is defined from the perspective of the analyst – something measurable across systems. An *emic* unit, by contrast, is meaningful *within* a particular system. According to Mirjam Fried (p.c.), Fillmore viewed **constructions as emic entities**: entities that emerge as meaningful units from within the language system itself. This helps explain why Construction Grammar resists abstract derivation and instead insists on describing the patterns language users actually employ – system-internal, culturally relevant and cognitively grounded.

[12] The term *tagmeme* was originally coined by Leonard Bloomfield based on the Greek word *tágma*, meaning "order" or "arrangement". The tagmeme was intended to be the minimal functional unit at the grammatical level, in parallel to *phoneme* for sound and the *morpheme* for meaning.

3.3 Constructio non Grata

We are still in the 1950s, when Fillmore was a graduate student at the University of Michigan in Ann Arbor; and when "something big happened, and suddenly everything changed" (Fillmore 2012: 707). The era of transformational generative grammar had started with Chomsky's *Syntactic Structures* (1957), and Fillmore "became an instant convert" (Fillmore 2012: 707).

Chomsky (1956, 1957) had shown how to formalize a grammar as a generative device that should account for all of the well-formed sentences of a language. He turned to Immediate Constituent Analysis, which (as we have seen earlier) was the prevalent kind of analysis in American linguistics at the time. Chomsky (1956: 117) gives the following example of an Immediate Constituent Analysis for the sentence *the man took the book*:

(5)

<table>
<tr><td>the man</td><td>took</td><td>the book</td></tr>
<tr><td rowspan="2">NP</td><td>Verb</td><td>NP</td></tr>
<tr><td colspan="2">VP</td></tr>
<tr><td colspan="3">Sentence</td></tr>
</table>

Chomsky (1957) then asked what kind of formal grammar would be capable of generating such analyses. He proposed that Immediate Constituent Analyses presuppose a kind of grammar that he called a **phrase structure grammar**. A phrase structure grammar (in its original conception) was essentially a set of *rewrite rules* that could generate *strings* (i.e. sequences of characters). For instance, the famous rule S $\rightarrow$ NP VP can be read as "the symbol S can be substituted with the symbols NP VP." The following set of rewrite rules thus represents a small phrase structure grammar that is capable of generating the string "the man took the book":

(6)

S	$\rightarrow$	NP VP
VP	$\rightarrow$	V NP
NP	$\rightarrow$	*the man, the book*
Verb	$\rightarrow$	*took*

It is quite fun to apply these rules using pen and paper. You start by writing the symbol S, and then you look for a rule whose left-hand side consists of the symbol S. You then substitute the S in your string-to-be-generated with the symbols of that rule's right-hand side. Using the above grammar, you would therefore rewrite the symbol S as the symbols NP and VP. Now we need to find rules whose left-hand side consists of either the symbol NP or the symbol VP so we can substitute those symbols as well. This action needs to be repeated until no substitutions can be found anymore.

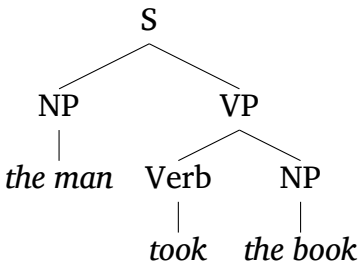
Example (7) shows one possible pathway for generating the string *the man took the book*, showing a sequence of substitutions that lead to an analysis. Symbols that are underlined are those that are substituted on the next line. This sequence of rule expansions is called a *derivation*.

(7)

Rules	Derivation	Description
Start symbol	S	
S → NP VP	NP VP	(*S rewritten as NP VP*)
VP → Verb NP	NP Verb NP	(*VP rewritten as Verb NP*)
NP → *the man*	*the man* Verb NP	(*NP rewritten as "the man"*)
Verb → *took*	*the man took* NP	(*V rewritten as "took"*)
NP → *the book*	*the man took the book*	(*NP rewritten as "the book"*)

A derivation can also be graphically represented as a *parse tree*, shown in (8):

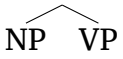
(8)



Since phrase structure grammar was explicitly designed to generate immediate constituent analyses, a phrase structure rule such as S → NP VP can be seen as a formalization of the kind of constructions that American descriptivists had in mind, such as Bloomfield's Actor-Action construction (see example (4)). This similarity becomes even more clear as later on phrase structure rules would be reformulated as operating on *tree structures* rather than on *strings* (McCawley 1968; Wall 1972). In this approach, a phrase structure rule represents a *local tree* that a grammar considers to be well-formed.

A local tree consists of a "parent" and its immediate "children", which mirrors Bloomfield's definition of a construction as a recurrent grammatical relation between a complex form (the parent) and its immediate constituents (its children). So the rule S → NP VP now becomes a shorthand notation for the local tree shown in example (9), and should be read as: "a local tree with parent S and immediate children NP and VP is well-formed according to the grammar."

(9)



It is therefore not that far-fetched to say that Chomsky was the first to formalize a (primitive) construction grammar. However, though he came very close, Chomsky would not become the founder of Construction Grammar, and – as we'll see in a moment – would even ridicule it later on.

One reason for this course of history is that Chomsky made a sharp distinction between a grammar (the device) and the output of that grammar (its product). So when Chomsky writes about "constructions", he is not referring to combinatoric building blocks – as Hockett (1954) and other descriptivists were increasingly doing – but to **the subtrees generated by the grammar** (Chomsky 1965: 12): ephemeral by-products without theoretical status.

But as noted by Hymes & Fought (1975: 1), the Chomskyan revolution wasn't a clean break with history either, and generative linguistics "has continued some fundamental traits of its predecessor, recovered others, and unwittingly rediscovered still others." The constructions-as-building-blocks, for instance, were initially still tolerated in Chomsky's grammar club, but only if they were stripped of meaning and dressed up as formal rules. However, it would not be long before they got their membership revoked as well. The fundamental reason why all constructions, even in this productive sense, became *constructio non grata* is that Chomsky's objective has never been to describe actual languages, but rather to construct "a theory of linguistic structure in which the descriptive devices utilized in particular grammars are presented and studied abstractly, with no specific reference to particular languages" (Chomsky 1957: 11).

To understand this goal, it is useful to know that Chomsky modeled his approach after the Newton-style of theoretical physics. Theoretical physics uses mathematical models for explaining natural phenomena, such as the observation that the harder you smash a tennis ball, the faster it will fly in a certain direction. However, instead of constructing a comprehensive taxonomy of such empirical observations, theoretical physicists formulate general theories or fundamental principles, such as stating that *any* object will speed up faster if you apply more force to it – not just tennis balls – and that objects with a smaller mass will accelerate faster than objects with a larger mass (that is, a tennis ball will accelerate faster than a basketball given the same force). Such generalizations can then be stated using abstract formulae without making reference to specific objects.[13]

Applying this model to linguistics, Chomsky argued that the grammars of descriptive linguistics focused too much on taxonomy and not enough on the underlying regularities and universal properties of language. He was particularly interested in explaining the one universal that all linguists can agree upon, namely that language users have a capacity for producing and comprehending an infinite number of sentences, which Chomsky called the "creative" aspect of language (Chomsky 1965). He therefore argued that the goal of linguistics should be to construct a general theory of that capacity – a theory of the universal principles that underlie all of the world's possible language structures.

From this perspective, it makes sense that removing constructions from the theory was high on the research agenda, because keeping them in the grammar would have shifted the enterprise toward a taxonomy of linguistic structures rather than a model of their underlying principles. For example, it would be perfectly possible to write a phrase structure grammar that includes the following two phrase structure rules for formalizing the English active and passive constructions:

(10)
$$\begin{array}{lcl} \text{S} & \rightarrow & \text{NP}_1 \text{ V NP}_2 \\ \text{S} & \rightarrow & \text{NP}_2 \text{ Aux-}\textit{be}\text{ V}_{\text{PAST-PARTICIPLE}} \text{ (}\textit{by}\text{ NP}_1\text{)} \end{array}$$

[13] In this case, we are dealing with Newton's second law of motion, which states that the acceleration a of an object is directly proportional to the force F acted upon it, and inversely proportional to the object's mass m. Or more formally: $a = F/m$ (often also reformulated as $F = ma$; Britannica: 2023).

However, if the objective is to capture linguistic generalizations at the most abstract level, this approach – though descriptively adequate – would require a different passive rule for every active one. Chomsky (1957: 43) noted that this "inelegant duplication" would be necessary for all alternating constructions. He therefore argued that exclusively using phrase structure rules would lead to grammars that are "extremely complex, *ad hoc*, and 'unrevealing'" (p. 34).

Chomsky concluded that phrase structure grammars by themselves were inadequate for discovering the abstractions he was looking for. In order to overcome this limitation, he revised the notion of *syntactic transformations* from his mentor Zellig Harris. Contrary to widespread belief among non-transformational linguists, a syntactic transformation does not describe an actual procedure for transforming one syntactic structure into another one, but rather a systematic relation that holds between a source and a target structure.[14] For instance, the passive transformation does not literally recompose an active construction into a passive one, but rather describes the following relationship between both constructions (Chomsky 1957: 43):

> "If S_i is a grammatical sentence of the form
> $NP_1 - Aux - V - NP_2$
> then the corresponding string of the form
> $NP_2 - Aux + be + en - V - by + NP_1$
> is also a grammatical sentence."

The resulting model was a Chomskyan twist on the tradition of marked vs. unmarked structures made popular by the Prague school of structural linguistics (Anderson 1989). All "core" structures of a language – the common, unmarked sentence types – were generated by a set of basic phrase structure rules. Everything standing out as atypical (or marked) would then be derived from these core structures through transformations. This, in turn, formed the basis for the architecture of "deep structure" versus "surface structure" that would become mainstream by the time Chomsky published *Aspects of a Theory of Syntax* (1965) – now still known as the *Aspects model*.

Constructions were therefore still implicitly present in early transformational grammar, but they served as a stepping stone towards Chomsky's long-term goal of an abstract theory of linguistic structure that no longer referred to particular languages. Unmarked or simple constructions were reflected in the phrase structure component, while marked constructions were generated by "construction-specific" transformations such as the subject-auxiliary-inversion transformation. Each major revision to transformational syntax would then add increasingly abstract devices to further reduce the reliance on language-specific elements. This cumulative development led from the rule-based architecture of *Syntactic Structures* to the principle-based models of later work (Chomsky 1981, 1995, 2004). As Chomsky (1995: 388) summarized this evolution:

[14] This misconception is understandable since early transformations did not preserve the source structure, hence any operationalization of such a transformation would have to be destructive. Following the dissertation of Emonds (1970), however, transformations evolved into structure-preserving rules that expand on existing tree structures.

> "A language is not, then, a system of rules but a set of specifications for parameters in an invariant system of principles of Universal Grammar. Languages have no rules at all in anything like the traditional sense."

One of the most consequential revisions occurred in the 1970s and 1980s with the rise of **lexicalized grammars**, which started with Chomsky's paper "Remarks on Nominalization" (1970). Lexicalized grammars reframe most language-specific conventions – those that were traditionally described as constructions – as properties of lexical items. This shift allowed the syntactic component of a grammar to shrink to a minimal set of universal operations and principles, effectively removing constructions from the formal architecture altogether.

It is against this backdrop of evermore abstract grammars that Construction Grammar came onto the scene of linguistics. As Fillmore (1989: 18) put it in his signature style:

> "[R]ecent [...] mainstream syntactic theories have the putative "advantage" of *eliminating* the intuitive notion of "construction" [...] in favor of a set of highly abstract independent principles. [... A] typical argument form has been that of examining the data of some [...] grammatical construction, and arguing that each of the linguistically significant properties exhibited in this body of data is independently explainable by an appeal to one or more of a small number of subtle and abstract, but simple principles, and being proud of the fact that in the formulation of these principles there was no need to mention specific grammatical constructions."

3.4 The Modern Synthesis

It is hard to pinpoint the exact sources that inspired Fillmore and his colleagues when they started to develop Construction Grammar. What is certain, however, is that he was deeply familiar with all the traditions we reviewed in this section. In his acceptance speech of the Lifetime Achievement Award of the Association of Computational Linguistics, Fillmore (2012: 702) recollects having studied both *Language* books by Sapir (1921) and Bloomfield (1933), which served as *de facto* course books at American universities. He also recollects having read descriptive grammars, and having taken courses in Thai, Sanskrit and Navajo from notable students and colleagues of Sapir: Mary Haas, Harry Hoijer, and Franklin Edgerton. Equally formative was his encounter with Kenneth L. Pike during his Michigan stint, as well as the many years he worked within Chomsky's transformational-generative framework.

As the next section will explain, Fillmore's definition of a construction cannot be classified as belonging to this or the other approach, but is rather a modern synthesis of the many ideas that were put forward by Franz Boas, Edward Sapir, Leonard Bloomfield, Kenneth Pike, Noam Chomsky, George Lakoff, Paul Kay, and many others: incorporating their most important insights, setting aside what was less fruitful, and adding a new distinctive twist of his own – all the while arguing for a pluralistic approach.

4 The Return of the Construction

Now that we have painted a picture of the *Zeitgeist* in which Construction Grammar emerged, we can better understand why reintroducing the notion of a construction felt like more than a few steps backwards for many generative linguists. For Fillmore and his associates, Construction Grammar represented a recovery effort: letting the so-called peripheral structures walk back into the grammar through the main gate, so all empirical data can be accounted for. But for proponents of transformational syntax, this move defied the central agenda: that linguistic theory should describe the human language faculty in abstract terms, without appeal to constructions.

4.1 Fillmore's Gambit

But there was more at stake than empirical coverage alone. For Fillmore – deeply influenced by Kenneth Pike's *Tagmemics* and the Sapir tradition of descriptive grammar – there was also a deeply human and cultural element. He saw language as firmly embedded in human behaviour. His concern with transformational syntax was therefore not only that it set aside "peripheral" constructions, but that it did so in complete abstraction from communicative purpose and social context: Chomsky's Autonomy of Syntax approach. As Fillmore (1989: 18) observed:

> "The fact that these highly valued explanatory principles are *abstract*–including no mention of specific grammatical constructions–and the fact that they are *formal* in character–including no mention of communicative purposes–goes along perfectly with the idea that the syntactic principles of a language can be fully described in isolation from everything else there is to kown [sic] about languages and their users."

This commitment makes early Construction Grammar a child of both generative linguistics – with its focus on formal precision – and **cognitive-functional** linguistics (Nuyts 1992; Bybee 1998). The difference between the cognitive-functional approach and 1980s mainstream generative syntax can be illustrated through the game of chess. Chess has a limited number of rules that allow for an infinite number of different games, such as:

1. Each type of chess piece has its own rules for movement.
2. A piece moves to an empty square unless it captures an opponent's piece. The capturing piece takes up the position of the captured piece, which is removed from the board.
3. The king moves exactly one square horizontally, vertically, or diagonally.
4. …

The rules of chess thus form a "generative grammar" in the sense that they delineate the space of possible moves. Pushing the king one square forward is accepted by this grammar as a "well-formed" move, while jumping two squares backwards is rejected. In order to play chess, it is therefore important to know the rules.

However, simply knowing which moves are "grammatical" does not automatically make you good at playing the game or even understanding it: you also need to know when to make a specific move to increase your chances at winning. In other words, you have to know how to make your moves "meaningful" and "relevant" in order to beat your opponent. Likewise, if you want to understand the strategy of your opponent, you need to figure out why they are making this particular move and not the other.

As it turns out, strong chess players know more than simply the rules of chess: they have memorized a whole stock of chess patterns that help them to understand better what is happening in the game and to plan their next moves. In fact, the "acquisition of chess patterns is *the* main ingredient for chess mastery" (Silman 2010: 638). According to Amidzic et al. (2001: 603), a "chess grandmaster studies and practises for at least 10 years to learn more than 100,000 patterns". One example of such a pattern is called a "gambit" in which a player sacrifices a piece (such as a pawn) in order to gain some advantage in return.

It is possible to describe each chess pattern by decomposing it into its most basic moves, but if we did so we would miss several generalizations and we would fail to explain why the pattern exists. For instance, the famous Queen's Gambit is an opening move in which White tries to sacrifice one of its pawns in order to dominate the center of the board, which has important strategic advantages. Chess patterns thus have functions and contextual properties that cannot be reduced to sequences of "grammatical" moves. In other words: strong chess players not only store the formal properties of chess patterns, but also their usage conditions – or what we would call *pragmatics* in linguistics.

Returning to the domain of language, the mainstream linguistic theories of the 1980s were taking a **reductionist** (or **atomistic**) approach in which constructions were treated as derivations of smaller and more abstract rules or principles. However, just like chess patterns cannot be reduced to a sequence of legal moves, Fillmore et al. (1988: 503) argued that constructions as a whole have properties that cannot be fully predicted based on their parts:

> "Traditional grammars are likely to have descriptions of the use and meaning of, say, negative questions, under the supposition that such structures might have certain properties of their own, as wholes. (An utterance of *Didn't you like the salad?* does more than ask a yes/no question.) In the atomistic view, which would not provide for a separate negative question construction, there is no way to treat the distinct semantic and pragmatic properties that emerge when negative and interrogative syntax are combined in an English sentence."

To describe those structure-specific properties, Fillmore et al. (1988) could have proposed a theory of the linguistic periphery to complement the abstract descriptions of core grammars; but instead Fillmore's gambit was to sacrifice some abstractions in return for a uniform grammar formalism that would be able to account for *all* of the structures of a language, warts and all, by making constructions the centerpiece of linguistic analysis.

4.2 Anatomy of the Fillmorean Construction

We are now in a position to bring together the many traditions that inspired Fillmore – from Boas to Sapir, Bloomfield to Pike, Chomsky to Lakoff – and see how they converge in his own definition of a construction; which can be seen as the starting point of the rich trajectory that the field has taken since.

To repeat an earlier quote, Fillmore et al. (1988: 501) claimed "that the proper units of a grammar are more similar to the notion of construction in traditional or pedagogical grammars than to that of rule in most versions of generative grammar." In absence of a concrete definition for this notion, we can begin with the following one of Haspelmath (2023: 1), which captures how "construction" is typically understood in present-day general linguistics:

> "A construction is a conventional schema for creating or motivating well-formed expressions in which there is at least one open slot that can be filled by one of several expressions belonging to the same form-class."

Haspelmath illustrates this definition with an informal schema of the English Genitive construction that underlies expressions such as *Fillmore's gambit* or *Haspelmath's schema*, which I repeat here in example (11). X and Y are variables for open slots: X must be filled by a noun phrase (such as *Fillmore* or *Haspelmath*) that is followed by the genitive marker *'s*, while the slot Y must be filled by the construction's head noun, such as *gambit* or *schema*.[15]

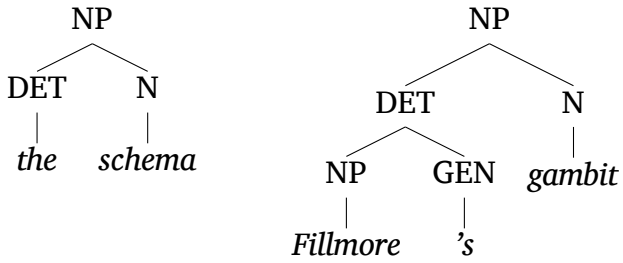
(11) $[_{\text{NP}}[\text{X}_{\text{NP}}] - s - (\text{Y}_{\text{N}})]$

Let us now try to develop a phrase structure grammar that can generate this schema as well as simple determined noun phrases such as *the schema*. Example (12) provides such a grammar, while example (13) shows two trees that can be derived from it.

(12)
NP → DET N
DET → NP GEN
NP → *Fillmore* | …
GEN → *'s*
N → *gambit* | *schema* | …
DET → *a(n)* | *the*

[15] This schema is of course a simplification of the actual English genitive construction. For instance, the slot Y can be filled by a non-determined noun phrase such as *triumphant return* as in *the construction's triumphant return*, not just by the construction's head noun. The first NP and the genitive marker *'s* together function as the determiner of Y.

(13)



Our phrase structure grammar succeeds at treating both *Fillmore's gambit* and *the schema* as noun phrases, and at indicating that the complex form *Fillmore's* behaves as the determiner of *gambit* just like the definite article *the* is the determiner of *schema*. However, the grammar also has an important shortcoming: it cannot properly describe the fact that there is a possessive relation between *Fillmore* (the possessor) and *gambit* (the possession) – something that seemed trivial to do using Haspelmath's general definition of a construction.

The problem lies in the **locality constraint** of phrase structure rules: they can only specify relationships between a single parent (on the left-hand side of the rule) and its immediate children (on the right-hand side). But the English genitive construction requires information to be shared across multiple layers, as it spans beyond the boundaries of a local tree configuration.

A second problem concerns **agreement constraints**. The rule NP $\rightarrow$ Det N successfully generates well-formed expressions such as *a schema* or *the schemas*; but it also admits ill-formed phrases such as **a schemas*. In principle, you could solve this problem by introducing more specific rules such as NP $\rightarrow$ Det_{SG} N_{SG} and NP $\rightarrow$ Det_{PL} N_{PL} for ensuring correct number agreement between the determiner and the noun, but such a strategy would lead to an explosion of rules and atomic categories if we need to capture all of the nuances of English syntax.

Fortunately, this second problem has a well-established fix. Ever since Harman (1963), phrase structure grammars have used **feature structures** rather than atomic symbols: the categories in our rules can be enriched with bundles of features. For instance, we can annotate our NP rule with a NUMBER feature for agreement, and impose a constraint that the relevant nodes must have the same value for that feature. We can informally write this down as:

(14)

NP	$\rightarrow$	Det		N
$\langle$NUMBER$\rangle$	=	$\langle$NUMBER$\rangle$	=	$\langle$NUMBER$\rangle$

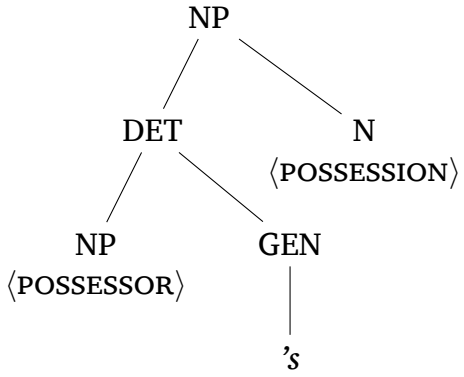
The technical details do not matter: for our purposes it suffices to know that we can attach additional information to the symbols of our grammar. The challenge for our genitive construction is that this is not enough: our first problem – the one involving distant relationships – remains unresolved. Solving it requires increasing the expressive power of our grammar to reach deeper levels of syntactic structure, as in:

(15) NP $\rightarrow$ [DET $\rightarrow$ NP GEN] N

Remember that phrase structure rules can be read as a shorthand notation for

local tree structures. Likewise, we can reformulate the rule of example (15) as a tree but this time we increase its span and stretch beyond the locality constraint. On top of that, we can add features to allow information to flow between distant nodes, exactly the kind of thing a construction is supposed to do – as illustrated in example (16).

(16) Simplified English genitive construction (tree):

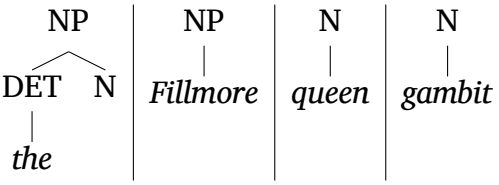


Imagine now that all this additional information – semantic roles, pragmatic cues, lexical preferences, even idiomatic meaning – could be bundled into a single, structured unit. At that point, we are no longer simply tweaking phrase structure rules. We are defining something much richer: the **Fillmorean construction**. To quote Fillmore et al. (1988: p. 501):

> "Constructions [...] are much like the [...] subtrees admitted by phrase structure rules, EXCEPT that (1) constructions need not be limited to a mother and her daughters, but may span wider ranges of the sentential tree; (2) constructions may specify, not only syntactic, but also lexical, semantic, and pragmatic information; (3) lexical items [...] may be viewed [...] as constructions themselves; and (4) constructions may be idiomatic in the sense that a large construction may specify a semantics (and/or pragmatics) that is distinct from what might be calculated from the associated semantics of the set of smaller constructions that could be used to build the same morphosyntactic object."

In other words, early Fillmorean constructions were partial tree structures that (at least on the surface) resembled the kinds of patterns that general linguists call "constructions" in their descriptions. One important "twist" is that lexical items can also be viewed as constructions because they can be represented as partial trees as well. This choice is quite controversial to present-day linguists and is matter of heavy debate even among construction grammarians, but it would have been quite normal before lexicalized grammars introduced a sharp syntax-lexicon distinction (just look at the phrase structure grammars that we've illustrated so far, in which lexical items are simply part of the rules). Example (17) illustrates some possibilities that are afforded by this integrative approach.

(17)



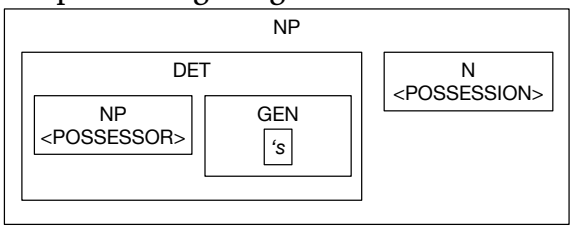
Note that these partial trees are not intended as precise analyses, but as illustrations of the **formal flexibility** that constructions afford. For example, *the* is represented as a lexical construction that spans more than one level of depth: a definite article like *the* does not occur in isolation, but as part of a determined noun phrase. Constructions allow us to encode that information directly by prespecifying some parts while leaving other parts open. This flexibility is one of the reasons Construction Grammar has been so successful at describing not only abstract constructions, but also idioms and semi-schematic constructions (Fillmore et al. 1988; Kay & Fillmore 1999).

Similarly, the proper name *Fillmore* can be represented as forming a "maximal noun phrase" on its own, while common nouns like *queen* and *gambit* still need to be combined with other constructions to do so.

Speaking of combining constructions, all you need for the grammar to generate well-formed parse trees is a method for using constructions as building blocks; and several formal and computational operationalizations have been proposed (Kay & Fillmore 1999; Steels 2004, 2011; Bergen & Chang 2005; Bod 2009; Sag 2012; Lichte & Kallmeyer 2017). For instance, the lexical constructions for *the*, *queen* and *gambit* may be combined with the English genitive construction for forming the noun phrase *the queen's gambit*. Figure 1 shows a possible derivation in three steps. In the first step, the lexical constructions for *the* and *queen* are combined to form a noun phrase, which is then inserted into the genitive construction in step two. Finally, the lexical construction for *gambit* completes the full possessive noun phrase in the third step.

While technically speaking, the Fillmorean construction was operationalized as a partial tree (Kay 2002), Fillmore and his colleagues, influenced by Tagmemics, typically described constructions as **structures with slots** – each slot to be filled by other constructions. Rather than drawing trees, they preferred a visual notation of "boxes-within-boxes" (Fried & Östman 2004), as shown in example (18). Here, the outer box is a parent node while the inner boxes are the children.

(18) Simplified English genitive construction (boxes-within-boxes):



Today, few construction grammarians explicitly model constructions as partial trees (Osborne & Gross 2012). But the idea of structured combination – with internal composition and open slots – remains a central metaphor.

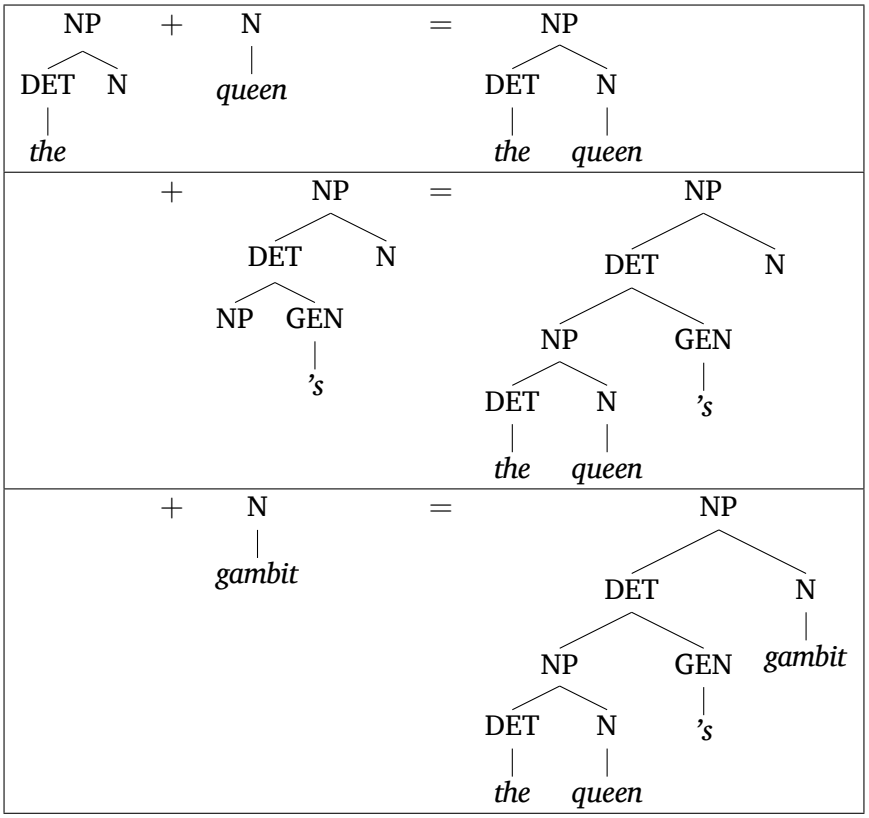


Figure 1: Early Construction Grammar operationalized constructions as partial trees that can be combined with each other to form larger structures. This Figure shows one possible order in which "lexical" constructions for *the*, *queen* and *gambit* can be combined with the English genitive construction to form the constituent structure of *the queen's gambit*. In the first step, the lexical constructions for *the* and *queen* are combined into a noun phrase, which is inserted into the genitive construction in step two. Finally, the lexical construction for *gambit* completes the noun phrase in the third step.

In sum, we now have a better grasp of how the Fillmorean construction offers a modern synthesis of all the traditions we discussed in section 3:

- **From Sapir, Bloomfield, and Pike**: Constructions are mappings of form and function, where function not only includes meaning but also pragmatic information and even interpretation conditions.
- **From Bloomfield and the American descriptivists**: Constructions are the building blocks of language, formalized as constituent structures (partial trees). But contrary to Bloomfield's immediate constituent structures, they can span across entire sentence structure.
- **From Pike:** Constructions are emic units that describe a language from the user's perspective. Furthermore, Construction Grammar inherited its slot-filler metaphor from *Tagmemics*, as well as "its inherent engagement in the behavior and purposes of human beings" (Fillmore 1989: 19–20).
- **From Chomsky:** A Construction Grammar is a generative grammar in the sense that it can account for the well-formed sentences of a language. But it does so by generating from constructions, not from abstract principles.

4.3 A Moving but Committed Target

Everyone who is familiar with the constructional literature knows that the word "construction" has gone through many different interpretations in the past decades (Ungerer & Hartmann 2023), as several variants of Construction Grammar have existed from the very beginning. One of those variants was the construction grammar of George Lakoff, whose case study on "There-constructions" (Lakoff 1987) was even published before the first Fillmorean classics came out (Fillmore 1988; Fillmore et al. 1988).[16]

Nevertheless, there is one definition that Fillmore proposed in the 1980s that I believe still covers (almost) all of the current uses of the term; and which we can use as a guide for staying on a constructional path. It comes from a little paper called "The Mechanisms of Construction Grammar" that I often re-read because I discover something new almost every time I revisit it. The definition goes as follows (Fillmore 1988: p. 36):

> "By **grammatical construction** we mean any syntactic pattern which is assigned one or more conventional functions in a language, together with whatever is linguistically conventionalized about its contribution to the meaning or the use of structures containing it."

I purposefully quoted the definition out of context at the risk of making it sound too vague or too "anything-goes" to be useful for sound scientific practice. My reasoning is that we cannot commit to a single definition, even the constructions-as-partial-trees one, because how we operationalize constructions depends to a large extent on our linguistic theory and research objectives. Do we want to use constructions for describing a language, or are they supposed to model linguistic knowledge in the minds of language users? Do we want to employ them in natural language processing systems, and if so, do we only care about getting an application to work or do we need to mimick human language processing? All these and related questions will determine what the best ways are for *representing* and *processing* constructions.

All of that does not mean that Fillmore's definition is consequence-free. On the contrary, it implies several commitments. We will discuss the two most important ones before wrapping up this article.

[16] George Lakoff's impact on Construction Grammar is undeniable and would require an article in its own right. This includes not only his involvement in the early days in Berkeley, but also his prior research on "Linguistic Gestalts" (1977) in which he argued for a holistic approach to grammar. Perhaps more importantly, Lakoff was advisor for Adele Goldberg's doctoral thesis, of which the book version became the most influential constructional publication to date (Goldberg 1995). This constructional lineage, now known as Cognitive Construction Grammar (Boas 2013) – despite Goldberg's own preference to simply call it a "constructional approach" (Goldberg 2013: 31) – is still described as "Goldbergian/Lakovian" on Wikipedia (https://en.wikipedia.org/wiki/Construction_grammar, last retrieved on 30 September 2025).

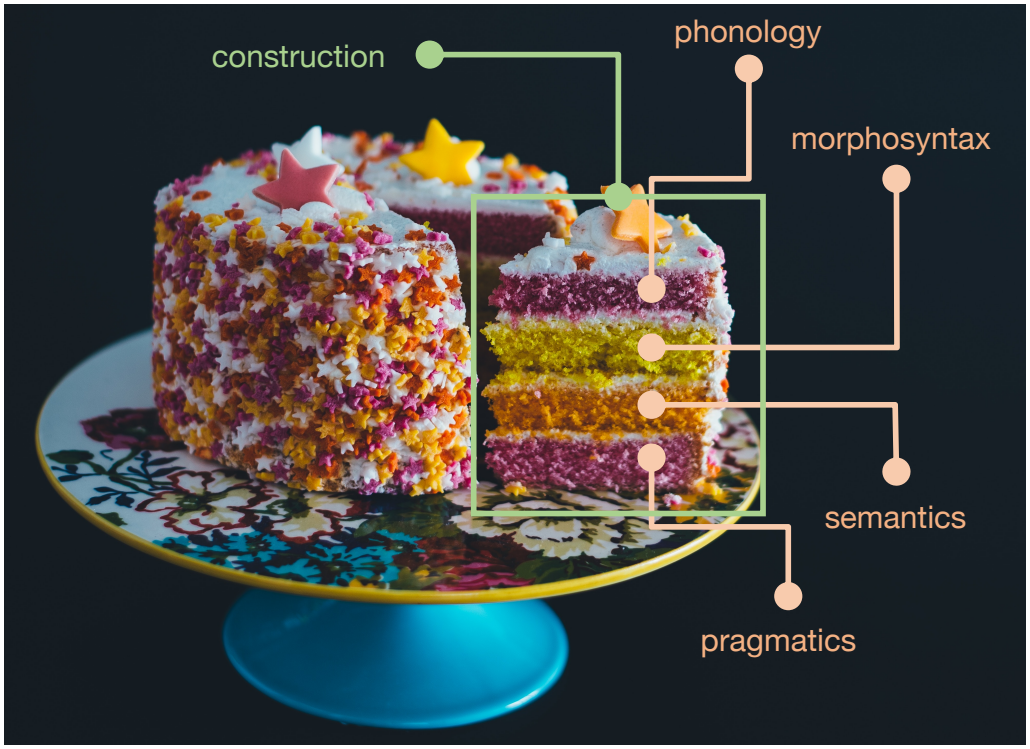


Figure 2: Traditional linguistics cuts the cake of grammar in horizontal slices. Construction grammarians cut the cake vertically because constructions access all of these layers of linguistic information simultaneously.

Commitment 1: Holism over Reductionism

The first commitment concerns how to manage the enormous complexity of language structures, which is a challenge that any linguistic theory must grapple with. Most theories take a *reductionist* or *atomistic* approach and try to break apart complex phenomena into more basic and therefore more manageable building blocks. In Construction Grammar, on the other hand, the primitive units of grammatical analysis (constructions) are inherently complex and multi-dimensional themselves (Fried & Östman 2004). Adopting the constructional perspective therefore means that you are committing to a non-reductionist, *holistic* approach to grammar.

The difference between the reductionist and holistic approach can be illustrated as a layered cake, as shown in Figure 2. In a reductionist approach, you cut the cake in horizontal slices: a scoop of phonology, a bite of morphosyntax, and a spoon of semantics. Construction grammarians do not eat the cake like that: you need to cut it vertically and gobble it up as a whole. The cake metaphor also reveals another thing: the reductionist and holistic approaches are not mutually exclusive. Calling constructions the "primitives" of a language does not mean that they are atomic (Croft 2001: 47): constructions have internal structure, but just like you cannot predict the flavour of a piece of cake by tasting its ingredients separately, you cannot reduce constructional information to the sum of its parts.

Other scientific fields offer plenty of demonstrations of how the reductionist

and holistic views can coexist and inform each other. In biology, for instance, chemistry is concerned with all of the elements that together form organisms, while cell biology treats the cell (which is more complex) as the primitive unit of life. Both perspectives are legitimate, and both are framed in a shared evolutionary framework. Linguistics, however, has no such common ground, which makes it harder to balance different approaches (Haspelmath 2019).

A good illustration of this tension comes from Chomsky, who has often downplayed the importance of constructions. When asked about them in an interview, he responded (Chomsky & Guignard 2011: 24-25):

> "No one doubts that constructions exist – that is, there is an active construction, a passive construction, etc. The only question is: what is their status? [...] Take focus constructions. Can we decompose them into properties that appear elsewhere [...]. The answer is that of course we can. [... T]he focus construction is a complex of independent properties, which is not to deny that it exists. Helium exists, but the sciences, being inquisitive, do not treat that as an unanalyzeable entity, but seek to decompose it as far as possible into interacting properties that appear elsewhere. Same with focus, passive, etc. Construction Grammar prefers some pre-Galilean stance – or perhaps more accurately, pre-Babylonian science stance. Why, I don't know."

But Chomsky's answer seems to reflect a common misunderstanding: of course constructions can be further analyzed, just as cells can be decomposed into their elements. The real difference lies in research goals.

Minimalism, for instance, seeks to explain Universal Grammar – our innate language faculty (Chomsky 1995) – while Construction Grammar focuses on the conventions that language users acquire to use a particular language. As Haspelmath (2019) notes, these are complementary rather than competing objectives: *g-linguistics* for the general study of Human Language, and *p-linguistics* for the study of specific languages. Recognizing this distinction allows us to see Minimalism and Construction Grammar not as rivals, but as parallel branches of inquiry.

Commitment 2: Prioritizing Languages over the Language Faculty

This brings us to the second commitment of Fillmore's definition: since constructions are *conventional* associations of form and function, the constructional approach is by definition oriented towards p-languages because every linguistic community has its own set of conventions. Theorizing about the human language capacity is still possible, but rather than taking a top-down view (starting from a theory about UG and trying to apply it to the world's languages), a bottom-up approach is taken that prioritizes unbiased descriptions of the data. The constructional commitment means that p-linguistics must inform theories in g-linguistics much more so than the other way round. The only *a priori* language universal that a Construction Grammar assumes is that constructions are the primitive units of grammatical knowledge – which, admittedly, is a Big One, but there are good methodological and empirical reasons for doing so (Croft 2001).

5 Summary: The Modern Synthesis

When Charles Fillmore presented the constructional approach at the Berkeley Linguistics Society in 1988, he was quite modest about it. "Unfortunately," he noted, "the framework I'll be speaking about is a moving target; in fact, it is one of a set of several moving targets with the same name" (p. 35). Nearly forty years on, Construction Grammar is still on the move (Ungerer & Hartmann 2023) – a clear sign of a thriving and pluralistic research community.

To better understand where the field stands, and where it might be heading to, it is important to know where it came from. This article has aimed to contribute to this understanding by recovering part of the rich intellectual heritage that shaped Construction Grammar – particularly its roots in American descriptivism and early generative grammar. This effort also helps to contextualize – and, in some cases, correct – persistent misunderstandings in current debates. One such misconception is the notion that Fillmore's flavor of Construction Grammar lacked a usage-based foundation, or that its formalism was divorced from usage-based concerns. As this article has argued, the opposite is true: the Fillmorean construction is deeply committed to descriptive adequacy and functional reasoning; and grew out of a long-standing concern with language as it is used and interpreted by a linguistic community.

Seen in this light, Construction Grammar offers a *modern synthesis* of earlier linguistic thought: a reassembly of long-scattered insights into a unified, usage-based framework.

But this is only part of the story. A full account of the constructional enterprise must also consider how the theory has evolved in response to challenges in semantics, usage, interpretation, acquisition, and emergence. These trajectories – some of which are explored in the broader book project to which this article belongs – form a collective attempt to answer a deceptively simple question: *what is a construction, and what can it do?*

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