

ENTRENCHMENT & PLASTICITY IN LANGUAGE STRUCTURE AND USE



JOAN BYBEE
UNIVERSITY OF NEW MEXICO

Entrenchment



Entrenchment: the establishment of a unit through repetition (Langacker 2008:16).

Entrenchment is a domain-general process.

May apply at various levels:

- a phoneme can be entrenched,
- a syllable,
- a word,
- a construction,
- a song or poem,
- an interactional pattern.

Entrenchment



- Langacker relates entrenchment to automatization.
- There are various aspects of a unit that can be automatized.
- **The accessibility** of the unit is directly related to its token frequency
 - Units with higher token frequency are easier to access, more likely to be accessed.
 - They are also less likely to be reformed on analogy with other patterns.

Entrenchment of links to meaning and context

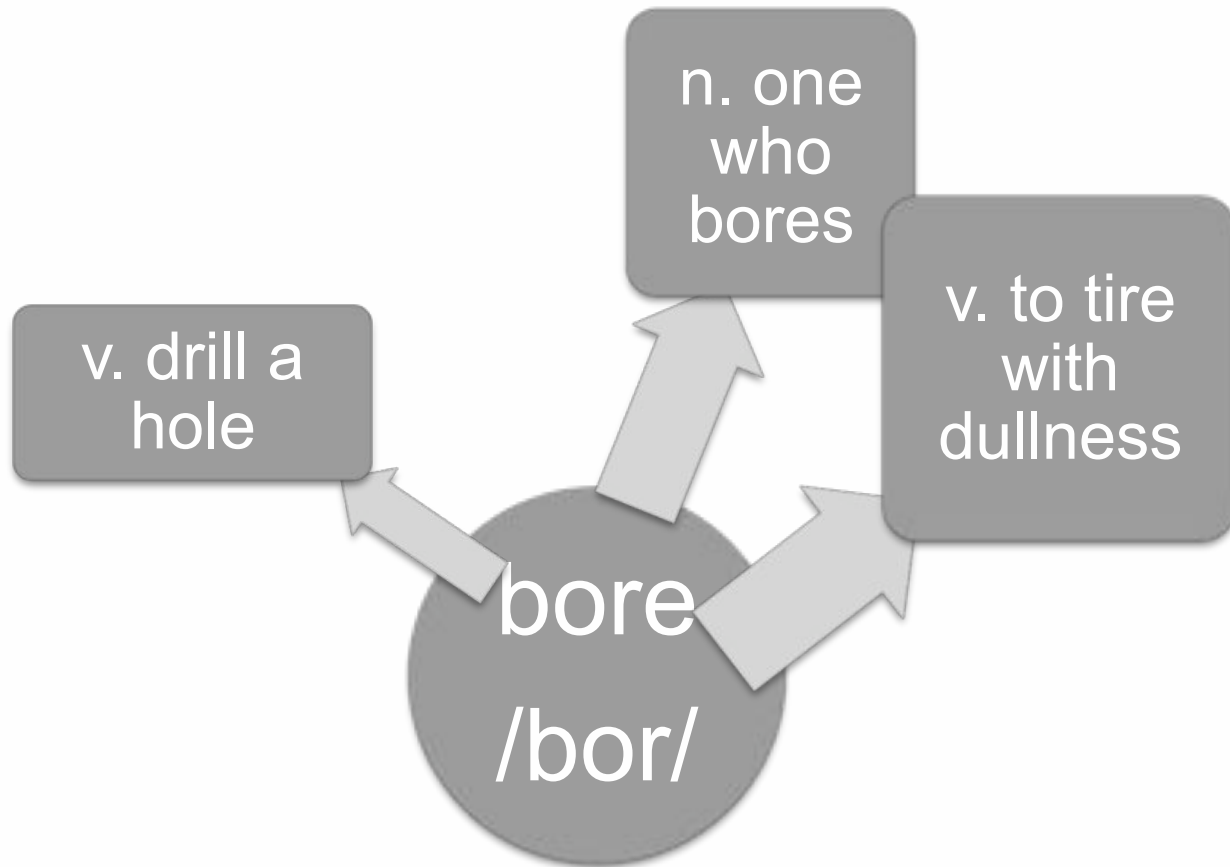


- The entrenchment of a linguistic unit, such as a word or construction involves the establishment of a link between the form of the word or construction and its meaning and contexts of use.
- This link has to be automated for quick access.
- It can be established in adults in one or two repetitions, as in the learning of a new word or phrase.

Link to meaning



- Of course, the same form can be linked to more than one meaning and these links have gradient strength (or degrees of entrenchment).



Entrenchment



- The form is entrenched.
- The links to meaning are entrenched.
- The meaning itself is entrenched.

All of these are entrenched or automated to varying degrees.

Link to meaning



Meaning can also change by the process of automatization

Inference:

In grammaticalization, frequently-made inferences can become part of the meaning. Thus the frequent inference of 'intention' from movement towards a goal, as in

I am going to see my sister

leads to the establishment of 'intention' as one of the meanings of *be going to*.

Link to meaning

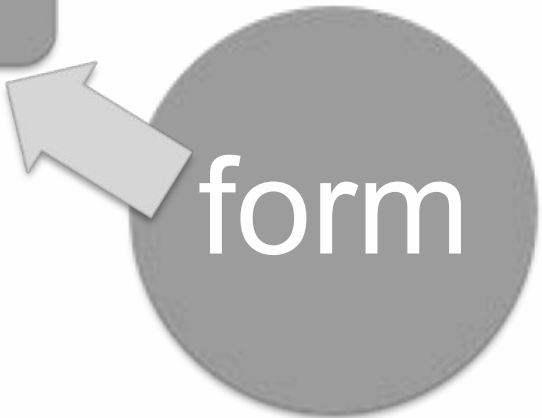


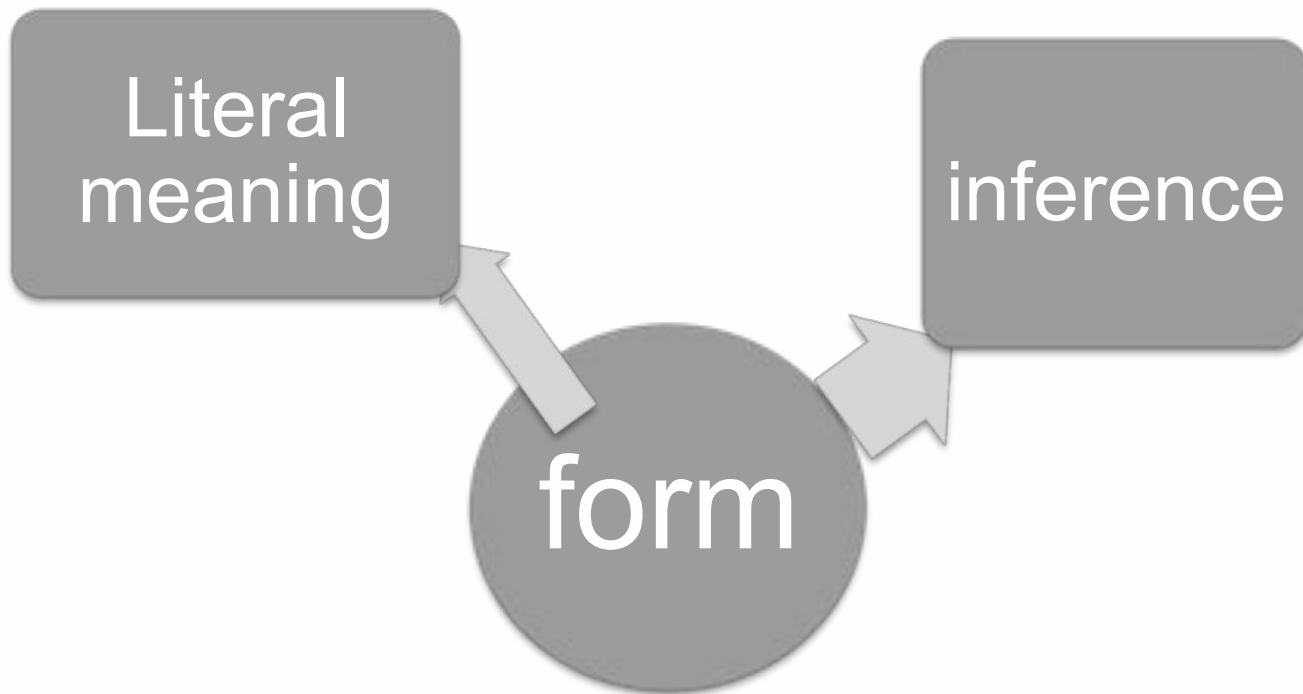
- As García and van Putte 1989 have proposed, the establishment of an inference as part of the meaning of a form or construction is a process by which the brain creates a short-cut.

Literal
meaning



Inference
in context

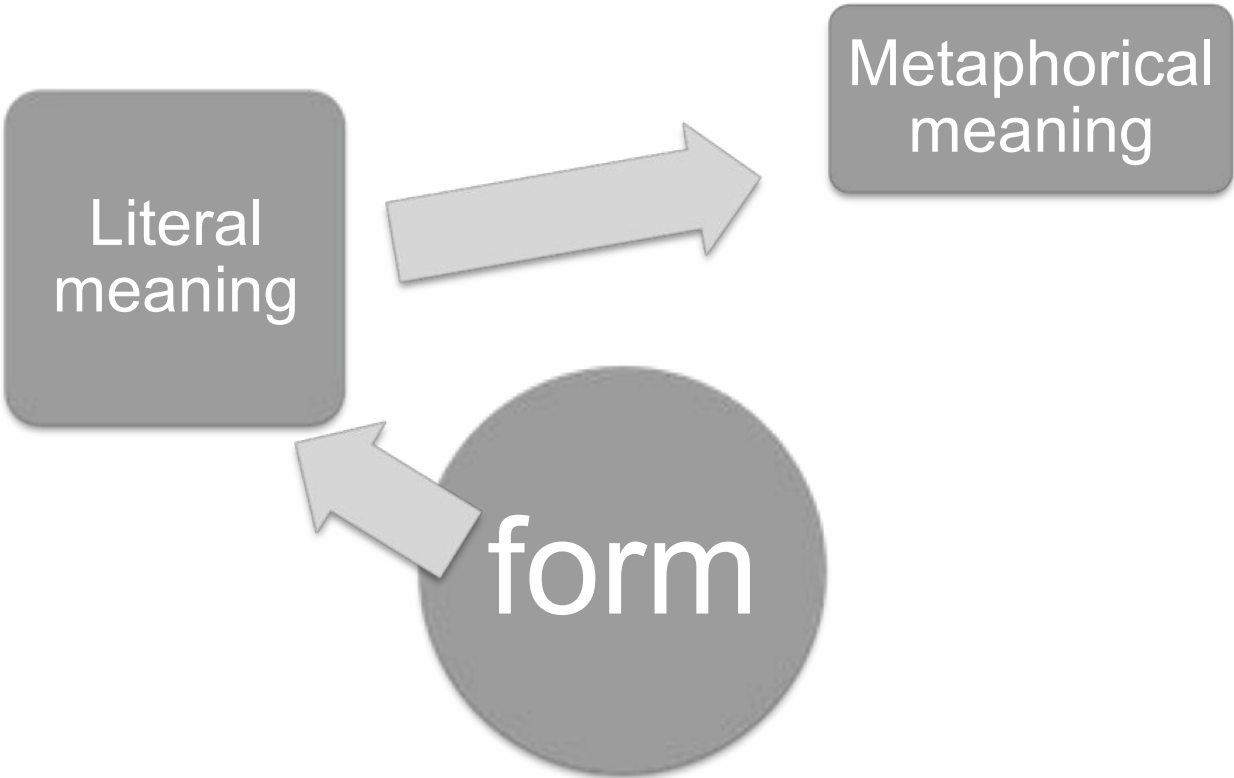


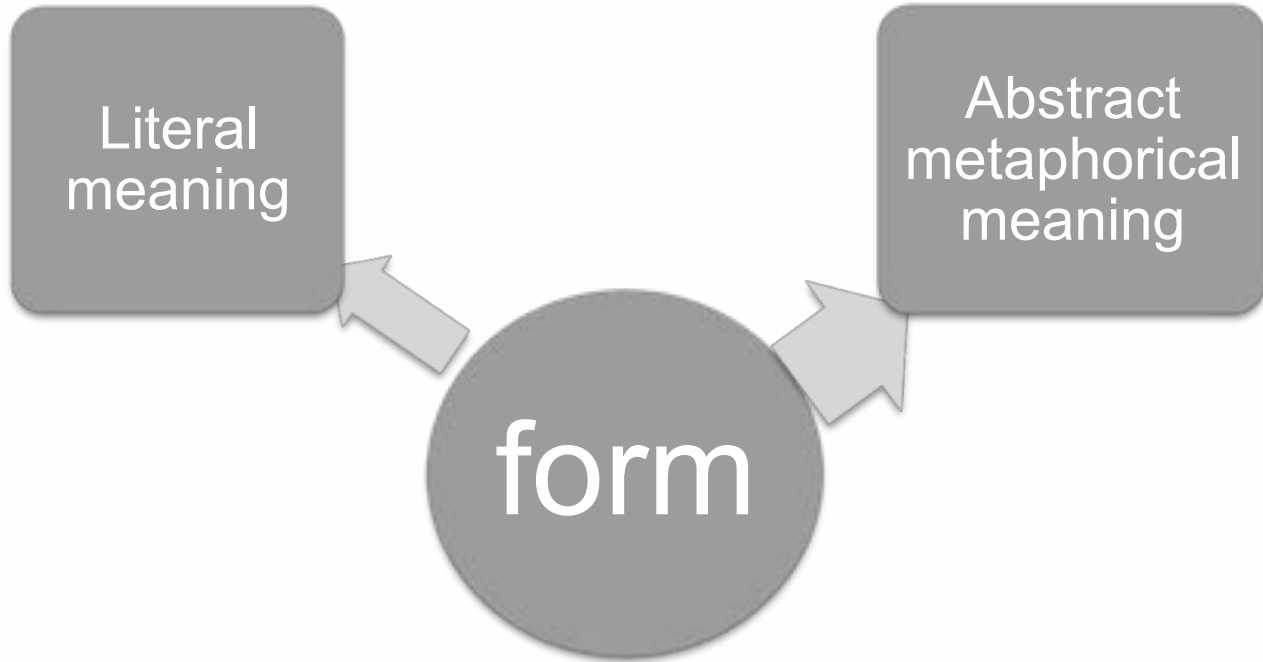


Link to meaning



- Metaphorical meanings can become established in the same way, through repetition or automatization.
- A metaphorical meaning may be accessed at first through the literal meaning, but with increased use, it can be accessed directly.





Sequential entrenchment



- The sequential relations within the unit are entrenched or automatized with respect to one another.
- An access or storage unit may have internal structure (Beckner and Bybee 2009).
- A construction or a prefab can be accessed as a unit even though its component parts are analyzable.
- Thus the construction

drive someone crazy, mad, bonkers...

is a unit even though all the words in it are also recognizable.

Sequential entrenchment



- Depending upon their frequency of co-occurrence, the words within a construction may be more or less entrenched or predictable from one another.
- In the *be going to* phrase, *be* occurs in a range of forms (*am, is, are*) but *going to* is constant. The greater phonetic reduction occurs between these two words.

Meanings can be entrenched



- Just as form can be entrenched, so meaning can be entrenched as well.
- Certain frequently-expressed meanings are easy to access and may give rise to alternate forms of expression.
- Examples will follow.

Review of entrenchment



- Forms are entrenched.
- Relations between sequences of forms are entrenched.
- Meanings are entrenched.
- The link between form and meaning is entrenched.
- Entrenchment is a matter of degree, based largely on frequency of use.

Plasticity



- **Plasticity:** The ability to use entrenched units in novel ways.
- Plasticity depends upon entrenchment.
- Novelty arises when links between entrenched units or levels are broken.
- In this presentation, I will illustrate breaks between entrenched aspects of linguistic expressions that give us evidence for both entrenchment and plasticity.

Types of entrenchment/plasticity to be examined



1. Plasticity in the schematic slots of constructions
2. Plasticity in the form – meaning connection
3. Plasticity in form given an entrenched meaning.

1. Plasticity within constructions



- The most familiar type of plasticity is the type that linguists have studied the most—the use of novel words in constructions.
- Our literature is full of studies of what types of words or morphemes can be used in what type of morpho-syntactic contexts.
- I will illustrate this with a rather fixed idiom that nonetheless allows some expansion or novelty.

The Social Media



THE FOUNDING OF FACEBOOK



Mark Zuckerberg

He doesn't
have three
friends to rub
together!



Cameron Winklevoss

To rub together



- In COCA, COHA, Time and BNC
 - Total occurrences of *to rub together* 55
 - Number with literal meaning 04
 - Number with idiomatic meaning 51

Meaning of idiom



(Not) have two Xs to rub together

Indicates impoverishment or the lack of it

Typical example (COCA 2007)

“I always had a place, and Susan and I have taken great care of each other, but I haven't had two nickels to rub together for a long, long, long, long time.”

Items in schematic slot: coins



• Nickels	11		
• Coins	04	total: 36	
• Farthings	04		
• Pennies	02		
• Ha'pennies	01		
• Tuppence	01		
• Shillings	01		
• Sous	01		
• Guineas	01		
• Cents	01		
• Dimes	01	Pieces	01
• Quarters	01	Beans	03
• Dollars	01	Tesseracts	01
• Food stamps	01		

Limited plasticity or productivity



- The schematic slot in the construction (the noun phrase *two Xs*) can be filled with a number of items, most of which are types of coins or monetary units.
- However, the construction has also expanded to indicate intellectual impoverishment as well.

Items in schematic slot: brain cells



• Brain cells	04	total: 12
• Brains	02	
• Brain neurons	01	
• Grey cells	01	
• Original ideas	01	
• Sentences	01	
• Words	01	

More creative:

- Two hits per game 01

Loss of compositionality



Why ‘rub together’? Where did this expression come from?

The corpus data show two examples that match with speakers’ intuitions about the origin of the meaning:

- (1) ...never found two twigs to rub together to make a small fire... (COCA 2005)
- (2) No longer do they search for sticks to rub together to start camp fires. (Time 1942)

Loss of compositionality leading to plasticity



I hypothesize these stages:

1. A hyperbolic expression about impoverishment:

He's so poor he doesn't have two sticks to rub together to make a fire.

2. The first sign of loss of compositionality is the use of forms of money instead of 'sticks'. This fits with the overall meaning of the constructions, but shows that people have lost the sense of why it was 'sticks' in the first place. *Rub together* still makes some sense because you can rub coins together.

A way
to make
a fire

Extreme
poverty

(lacks) two + sticks + to +
rub + together

Further extensions



3. The extension to intellectual impoverishment is metaphorical. We see evidence of further loss of compositionality in these uses:

(3) convinced as they are that not a single person who'd work as a tech at their company actually has two brains **to rub together**. (2005 COCA)

(4) that way he has of acting as though he doesn't think you have two brains **to rub together** if you disagree with him. (COHA 1966)

(5) we're talking Terry, Terry who hasn't got a brain cell **to rub together** (BNC)

Entrenchment and plasticity



- In this case, both the entrenchment and plasticity lead the expression farther and farther away from its compositional meaning.
- In terms of entrenchment we see that the tendency to take shortcuts to the intended meaning leads the expression directly to a meaning of impoverishment.
- This new meaning leads to extensions to use with forms of currency.
- Then to further extensions in which *brain/brain cell* are the relevant nouns and the idea of two things to rub together is also lost.

Plasticity



- This is the usual form of plasticity studied by linguists.
- While we usually concentrate on the schematic slot in the construction, it is important to note that plasticity in the link to meaning is also important for the evolution of the construction.
- In the following examples, I present other cases of plasticity in the link to meaning.

2. Prefabs



- Prefabs are conventionalized word sequences which may or may not have transparent meanings.
- They include the customary way of saying things, as
 - *Dark night* vs. *black night, obscure night*
- Not fully compositional sequences: *all of a sudden*
- Idioms that may contain metaphors, metonymy and hyperbole: *turn over a new leaf, give me a hand, raining cats and dogs*

Prefabs as titles



In certain types of journalistic genres, there is a strong tendency to use prefabs as titles of articles or captions of illustrations.

- Examples are newspapers, especially sports pages and certain types of magazines.

Out of 20 articles in United Airlines spring issue of *Hemispheres*, 16 used prefabs as titles.



Horsing around
is an article
about an exhibit
on horses at
Chicago's Field
Museum.



Horsing Around

Did you know that horses on the Pony Express sported full-length
manes and tails that they carried on their backs? Or that horses could be
trained to peep? You would if you visited "The Horse" at Chicago's
Field Museum, open exclusively to through August 15. Displaying
everything from classic saddles to contemporary horse art
paintings, the show gives an overview of the horse's history, from
evolution to ship with civilization. [fieldmuseum.org](#)

Prefabs in titles



- The remarkable fact is that it is not usually the prefab meaning that is intended, but some other meaning.
- Apparently a ‘wittiness’ effect (Brône and Coulson 2010) is achieved by this double grounding of the meaning of the prefab vs. the meaning intended for the article.

Metaphors



Brône and Coulson 2010 studied the use of metaphors in newspaper titles, such as

(5) Boeing shares are going sky-high.

They show in an experiment that subjects take longer to process a double-grounded sentence such as (5) than a single-grounded one such as (6):

(6) Intel shares are going sky-high.

In a second experiment they found that subjects rated stimuli such as (5) as wittier than stimuli such as (6).

Metaphors in titles



- The United Airlines magazine I studied used metaphor in only two article titles.

Metaphors



- This metaphor is comparable to the ones studied by Brône and Coulson: the metaphorical meaning is the one most likely to be accessed first (as it is the more common meaning) and if the reader accesses the more concrete meaning—that the 737 really does reach for the sky—a wittiness effect is obtained.
- However, no other examples I found were exactly like this.



GRILL PLANT: BASIL

A NEW LEAF

THE FOLLY OF GRANTING YOUR
DEEP HEAVEN A REAL FEEL
OF A SPINACH

GRANTING YOUR DEEP HEAVEN is the only way to "grill" and this is the only way to grill the plant that is the most important of basil for the people of the world. The most important part of basil is the leaves and stems and not the roots. The leaves are the most important part of the plant and the stems are the most important part of the plant. The leaves are the most important part of the plant and the stems are the most important part of the plant.

But the most important part of the plant is the leaves and the stems are the most important part of the plant. The leaves are the most important part of the plant and the stems are the most important part of the plant. The leaves are the most important part of the plant and the stems are the most important part of the plant.

Metaphorical meaning most common



- *A new leaf* accesses the metaphor *Turn over a new leaf*.
- The metaphorical meaning is accessed because this is the most frequent meaning associated with *new leaf*.
- In the Corpus of Historical American English there were 177 tokens of *a new leaf* and 161 involved a person *turning over a new leaf*.
- Six tokens had the meaning ‘turn a new page’ and the other 10 were actual leaves.

A new leaf



- The article is about Thai basil. That's the 'new leaf'.
- It's not clear that the usual metaphor is invoked. One could say that the reader should turn over a new leaf and try Thai basil, but that is a stretch.
- It seems rather that just using part of the prefab rather than some non-conventionalized phrase such as 'A new kind of basil' or simply 'Thai basil' was more satisfying to the author or editor.

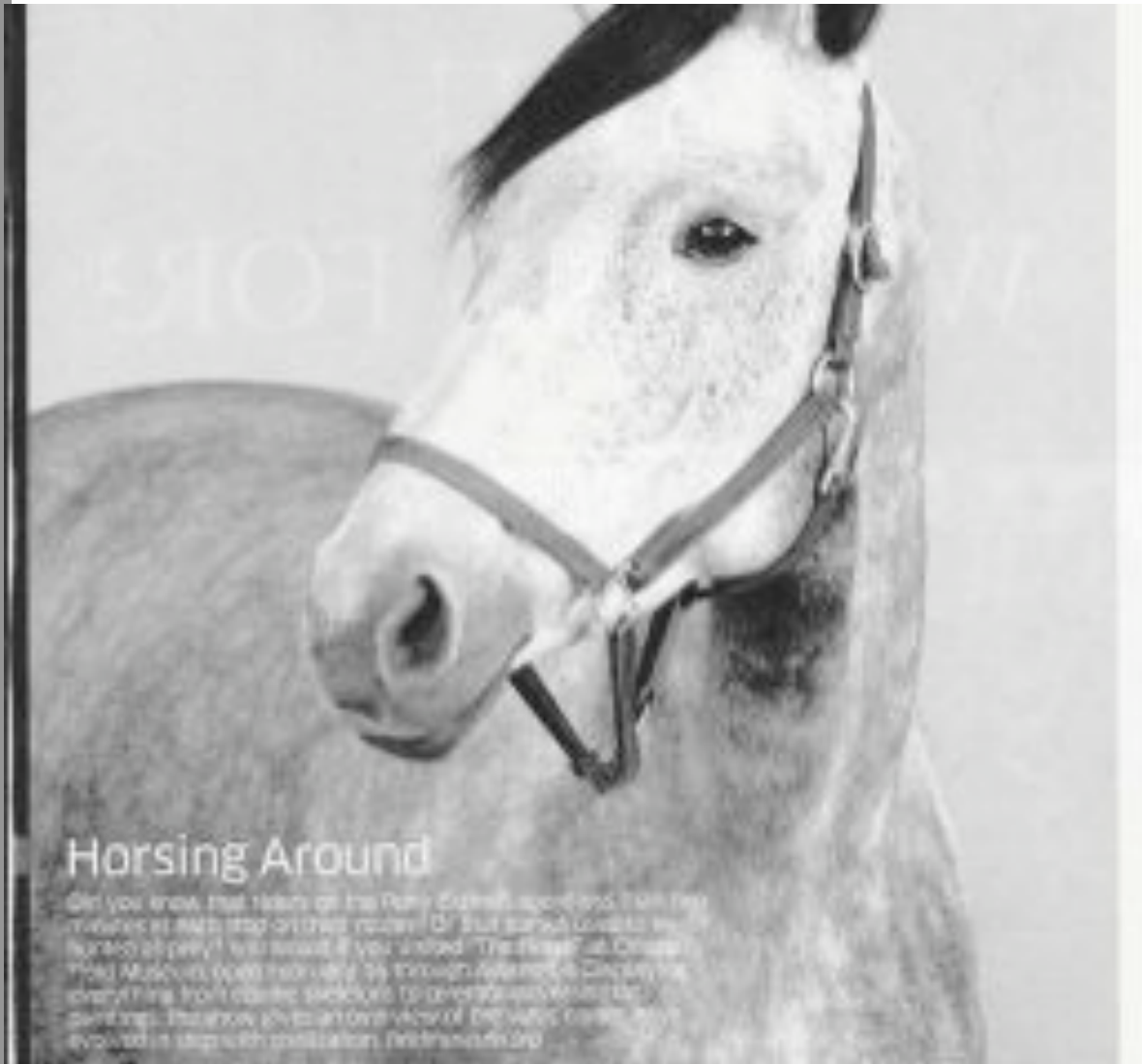
No metaphor accessed



- The most common examples of prefabs in titles were cases where no metaphor was invoked; rather, one or two words of the title were relevant to the story, but the original and most common meaning of the prefab was not.



Horsing around
is an article
about an exhibit
on horses at
Chicago's Field
Museum.



Horsing Around

Did you know that horses on the Pony Express sported full-length
manes and tails that they carried on their backs? Or that horses could be
trained to peep? You would if you visited "The Horse" at Chicago's
Field Museum, open exclusively to through August 15. Displaying
everything from classic saddles to contemporary horse art
paintings, the show gives an overview of the horse's history,
evolution and its relationship with humans. [fieldmuseum.org](#)



- The only link between the article and prefab is the word *horse*!
- In the next example, the connection is even more remote.



Three for the Road

BY MICHAEL MASSI, LISA PATRICK, TERRY RYAN
PHOTOGRAPHS BY MICHAEL MASSI

Three for the road is a classic Harley-Davidson theme. The three bikes are produced in the same factory in the original "Three of a Kind" is made by Harley-Davidson, which is the only Harley-Davidson factory that produces Harley-Davidson motorcycles. The Harley-Davidson factory is located in Milwaukee, Wis., and is the only Harley-Davidson factory in the world. The Harley-Davidson factory is the only Harley-Davidson factory in the world.

Harley-Davidson motorcycles are known for their reliability and performance. The Harley-Davidson factory is the only Harley-Davidson factory in the world. The Harley-Davidson factory is the only Harley-Davidson factory in the world.

Harley-Davidson motorcycles are known for their reliability and performance. The Harley-Davidson factory is the only Harley-Davidson factory in the world. The Harley-Davidson factory is the only Harley-Davidson factory in the world.

This title accesses the expression *have one for the road*, which refers to having a drink before leaving. Nothing in the article refers to this sense.

Lose association



- In these three examples (out of five in the magazine) a word or two in the prefab is relevant to the article, but the meaning of the prefab is not.
- In fact, after accessing the meaning of the prefab, the reader has to break that link to meaning and establish another meaning for the familiar expression.
- Presumably this type of word play is considered witty rather than annoying!

Getting Fit

VIRTUAL FRESHING ROOMS GIVE YOU THE FULL SHOPPING EXPERIENCE, MINUS THE UNFLATTERING LIGHTS. BY JEFF KRAVITZ FOR *ENTREPRENEUR*

Internet has transformed the way we do business. From your car-wash garage, you can now buy a house, you can drive around the Web, and you can even get a personal shopper for buying for

you. But what if you could do even more, buying more like you shop? Customers who buy clothes without ever leaving home. There are a lot

of different approaches to this idea. Some offer a virtual closet for customers, allowing them to buy clothes online, adding clothing you don't



Polysemy



- The case of *Getting Fit* is interesting.
- This phrase is polysemous and the most usual meaning of ‘getting into good physical condition’ is not the one intended by the article.
- The article is about ordering clothing over the internet and getting clothes that fit.
- So the title of the article is purposely misleading.

Polysemy



- About half of the uses I found in COCA referred to a person who used a type of cocaine, the other half to a person who loves to go fast.
- So this title is descriptive of the content of the article.

Extension of the meaning of prefab



- *The Big Ten* for a list of ten books, movies and CDs.
- *City of Lights* referring to Buenos Aires.
- *Parting the Sea*: an article about the flood gates protecting Venice, Italy.
- *All in the (United Family)* about pilots joining United Airlines who are twin Brothers.

Puns rely on (near) homophony



- Puns also disrupt the form / meaning correspondence by suggesting more than one meaning for a form.
- Two occur in the same section.

This fellow cooks Thai food. The pun is based on sound, not spelling. The meaning of *tie score* is not relevant to the story.



Thai Score

THE BEST NEW RESTAURANT IN BANGKOK IS HELMED BY A BRASH AUSTRALIAN IMPORT. BY ANDREW WATSON

WHEN AUSTRALIAN David Thompson opened Noma in Bangkok last September, The New York Times reported that he was "the greatest living American chef." He'd been in the kitchen for 20 years, and he'd just opened his first restaurant in London. He'd been in the kitchen for 20 years, and he'd just opened his first restaurant in London. He'd been in the kitchen for 20 years, and he'd just opened his first restaurant in London.

...a chef in Thailand, scores his guests more than his past Thai. He's been cooking Thai food ever since he discovered it on his first trip to the country 20 years ago. His first restaurant in his hometown of London was called Noma Thai and before that in 2008 he opened the first Noma in London. It earned the only Michelin star for a Thai restaurant in Europe and Thompson, who is charming and well-spoken as well as being a really smart, very confident authority on Thai food.

This is also the story about Thai food. The title *Far Eats* is also a pun and this time *Far East* is relevant to the story.

FAR EATS

Discover some of Thailand's best foods in a hidden beach paradise.



On the southwest coast of Thailand, 515 miles from Bangkok, you'll find a bacchanal serving some of the best cuisine in the country. The Trang Food Festival (March 24-31) showcases dishes unique to the province of Trang, a shipping port where Chinese and Malay Muslim cultures and cuisine mix with Thai flavor and, of course, excellent seafood. Up to 70 local chefs will be serving kopi coffee brewed over a wood fire (above); Trang roast pork, a not-to-be-missed pig roast marinated for five hours in Chinese soles and honey; fried fish dumplings; spongy Trang cake; and khonom jeen, cold noodles with fish sauce or curry. Visitors with a healthy appetite can sign up for the eating contest, the more laidback can munch on their victuals while listening to live Thai folk music and lounging on the white-sand beach.—KM



Some 'straight' prefabs in titles



- Two titles were prefabs that did not have any double grounding.

This is a letter about the merger of United and Continental Airlines. The title *Coming Together* is a prefab, but one of its usual meanings is intended here.



Coming Together

UNION AIRLINES and I look forward to choosing us for your flight today. Last October, United Airlines and Continental Airlines completed the new United. With our opening to the general public and our merger a single operating certificate from the Federal Aviation Administration that will allow us to operate in one country. We hope to provide benefits by the end of 2012. In the meantime, we are beginning to integrate our two companies. The full integration will likely take about 24 months, but that will be worth the wait along the way as we see how our combined operation independent, an exciting and beneficial for our customers as we see.

You're probably wondering how we're going to merge our brands as we continue our overall process with the new United's Every Airline

from which we've received 90% of our growth. Although we're currently substantially lower than competing airlines, the 1.2 billion annual revenue and 1.2 billion annual revenue. It will take a longer time than it will take to integrate our two companies. As long as we can keep our customers and employees at all cost of service time. That will be the only way we can ensure that changes are made and I think we'll like what we will be doing.

As for the new United, we will be very focused on customer service. During your travels, you'll find a better service with just a handful of our employees, but it takes the whole team of more than 20,000 new United employees to keep our operations running safely and smoothly. Each month, thousands will go through our

that you can know more about the new and better services the best of our employees. This month, we're bringing it to you about change. But, as Continental 777 crew, both Airwest Captains and First Officers. We're excited to see how we'll be a United 777 First Officer. They are an interesting mix of the merger of Continental and United.

On behalf of the entire new United team, thank you for choosing us for your flight today. We look forward to seeing you onboard again soon.

Jeff Smisek

As CEO, Jeff Smisek is responsible for all United operations.

Another straightforward use of a prefab. *Story Telling* for a short piece about Joyce Carol Oates.



Story Telling

IN HER NEW BOOK, JOYCE CAROL OATES TAKES A LOOK AT THE DARKER MATTERS OF THE HEART.

BY LAURA SCHLACK

JOYCE CAROL OATES has a book published more often than the average person cleans her closet. Each of over 50 highly acclaimed novels, 20 short story collections, and eight plays invites readers to lose themselves in an ominous and twisted world. Her latest, *Cave for Your Heart: Tales of Mystery and Suspense*, a collection of short stories, is no exception. "I've been writing about love, obsession and jealousy from a feminist perspective for years," Oates says.

She points to one of the stories, "Strip Poker," as a prime example: In it, a 13-year-old girl finds herself playing cards with a group of predatory men whom she must outwit. "I wanted to show a young girl who is able to triumph over the boys and draw upon some inner reserves," Oates says. "I thought that was an important message."

Although she likes the message in that one best, she admits her favorite story in the book is "Vera Case." "It's kind of dark. It's about a soldier in the Iraq war who comes home to his family and is abusive to them, which is something that's happening a lot. I just really like the scene in that one," she says.

And what of all those other books with her name on them? No matter what she writes, Oates is asked about her prolificacy. She chuckles wistfully at the question and says, "Well, most writers write a lot. I work with people at Princeton who are writing all the time—articles, essays, short stories, novels—but people just don't interview them."

Prefabs as titles



- In this journalistic style, there is a strong tendency to prefer the entrenched prefabs as titles of articles.
- Four articles did not have prefabs as titles. Two were proper names of people and one of a city. The other was entitled *The places I go*. I did not count that as a prefab.
- What is the function of the entrenched phrases? We have seen that they are usually not descriptive of the content of the article and thus they place an extra burden on the reader.

Prefabs as titles



- **The allure of prefabs as titles:**
 - Wittiness of word play engages the reader
 - Familiarity: the entrenched phrases make the content of the magazine seem more familiar and perhaps draw the reader in.

Plasticity and entrenchment

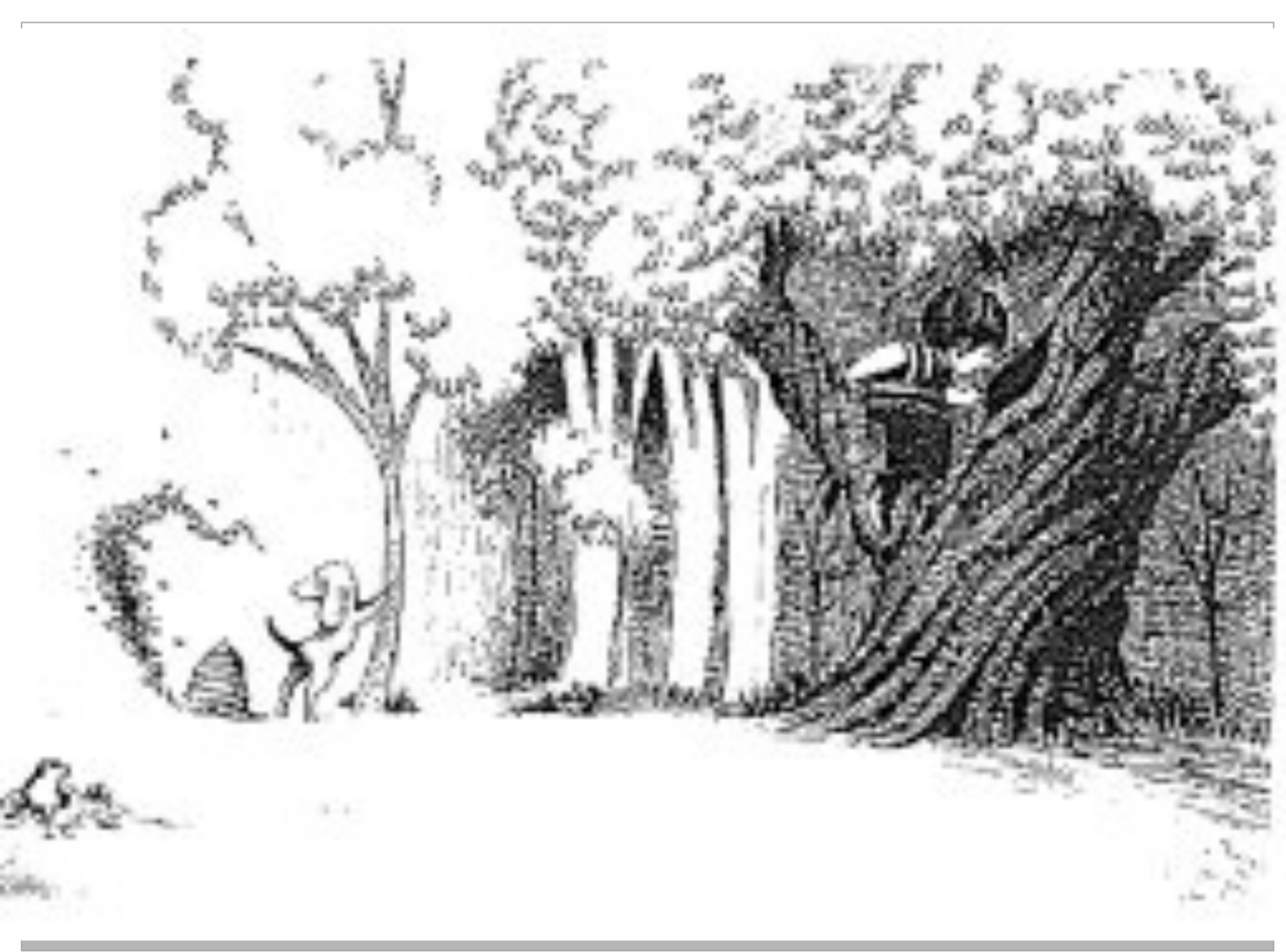


- The wittiness factor depends upon entrenchment and ease of access of the phrase
- It also depends upon the reader's plasticity or ability to break the usual link between form and meaning. In most cases, the intended meaning is NOT the most accessible one.
- These cases illustrate the power of entrenchment of form and entrenchment of the link between meaning and form.

3. Entrenchment of meaning



- Linguistic meanings can also be entrenched independently of the forms that express them.
- Slobin's work on 'thinking for speaking' provides evidence that speakers have entrenched patterns of conceptualization for the purpose of speaking.
- The linguistic description of a situation (event or state) is necessarily schematized—only certain aspects of the situation are coded linguistically.
- Languages have distinct patterns of schematization that can be habitually accessed in speaking.



Slobin 1996



English: assert trajectory imply end-state.

The boy climbed the tree.

Spanish: assert end-state, imply trajectory.

El niño está subido en el árbol.

'The boy is up in the tree'

Further evidence for entrenched meaning



- Lexical and grammatical layering and renewal

- Obligation markers:

Most languages have one or two lexical verbs to express obligation.

E.g. Spanish *deber*, *tener que*

English has three modal auxiliaries, *shall*, *should* and *must* but also newer formations:

Ought to, *have to*, *have got to*, *got to*

In English we use obligation markers where other languages would use simple predicates.

Once obligation meaning becomes entrenched, we develop multiple ways to express it.

Renewal in grammaticalization



Smith 2006 argues that in grammaticalization, renewal is more common than innovation.

It is much more common to find renewal of expression for meanings already grammaticalized than innovation of a new grammatical category.

(young) anterior > perfective / past

Using the database assembled for *The evolution of grammar* (Bybee, Perkins and Pagliuca 1994), Smith finds that of the 39 languages that have a gram at the beginning of this path, 34 (87%) occur in languages that already have a gram later on this path.

Renewal in grammaticalization



- Expression of future is similar.
- Old English had no grammatical marker of future.
- Present Day English has three—*will*, *shall* and *gonna*.
- In the database for *The evolution of grammar*, we find of the 70 languages that have a future gram, 49 have two or more. Of these, 26 have three or more.

Renewal according to Gabelentz 1891



- Hopper and Traugott 1993 write:
 - Gabelentz invites his readers to visualize linguistic forms as employees of state, who are hired, promoted, put on half-pay and finally retired, while outside new applicants queue up for jobs!

Lexical renewal and layering



From Day One,
I will



Expression of 'from the beginning'



from Day One

right from the beginning

from the very beginning

from the very first day (moment, night, season...)

from the start

from the very start

from the outset

from the get-go

Why do we need so many ways to say the same thing?



- The meaning is entrenched and we want to express it. If one means of expression doesn't seem strong enough, we come up with another.

Entrenchment



- We have evidence for entrenchment of form, including sequential entrenchment, of meaning and of the form-meaning connection.
- Note that most of the evidence for entrenchment invokes plasticity.
- Entrenchment and plasticity aren't just opposite ends of a scale, rather they describe two cognitive processes: entrenchment builds up representations in memory and plasticity manipulates them.
- Together they interact to produce conventional but productive language use.