**Final Exam Questions**

WEEK 10: EFFICIENCY

According to researchers like Zipf (1949), languages are subject to a speaker-centric pressure called \_\_\_\_\_\_, and a comprehender-centric pressure called \_\_\_\_\_\_\_\_.

1. **Unification; Diversification**
2. Diversification; Unification
3. Ease; Clarity
4. Clarity; Ease
5. Nativism; Anti-nativism
6. Anti-nativism; Nativism

Which of the following pieces of evidence, if true, would be **most *inconsistent*** with the view that language is shaped *solely* by a drive for efficiency?

1. **Even in languages with strict word order, case marking is preserved to a greater extent when it is associated with a positive social bias.**
2. Languages with strict word order tend to lose case marking, because they convey redundant information.
3. Languages with case marking tend to have more flexible word orders.
4. Color naming systems around the world tend to maximize within-category similarity, and across-category dissimilarity.
5. Social biases (e.g., markers of social class) do not affect whether case marking is preserved.

(T/F) Although color naming systems differ in exactly how they "carve up" the color space, all color naming systems have the same *number* of color terms.

1. True
2. **False**

(T/F) Although color naming systems differ in exactly how they "carve up" the color space, they all tend to maximize within-category similarity and across-category dissimilarity.

1. **True**
2. False

(T/F) In languages with case marking, the question of "who did what to whom" is typically determined by strict rules about word ordering.

1. True
2. **False**

WEEK 9: CONVERSATION

Suppose a researcher discovers that people are more likely to "twitch" their ears at the end of a turn-constructional unit (TCU) than elsewhere in a conversation. Does this *entail* that "ear-twitching" is **intended** as a communicative signal?

1. **No; it's possible that it indexes something else, like lower cognitive load.**
2. Yes; it likely indexes lower cognitive load, which means it is intended as a communicative signal.
3. Yes; it is co-timed with other back-channels, which means it is intended as a communicative signal.
4. No; if it was a communicative signal, it should be randomly distributed throughout the conversation.

Suppose Tyler is telling Harshada about an event that happened recently. Harshada isn't sure she heard correctly, so she says: "This was yesterday?" What conversational device is this an example of?

1. **Restricted offer**
2. Restricted request
3. Open request
4. Self-initiated repair
5. Collateral interjection

In a study investigating open request repairs across ten languages, Dingemanse et al (2013) found:

1. **The intonational pattern of open request repairs is calibrated to the prosody of yes/no questions in that language.**
2. Open request repairs have the same prosodic intonation across all ten languages.
3. Open request repairs are always initiated by the speaker, with a preference for "third-turn repair" at the latest.
4. Open request repairs exhibit very little systematicity across languages.

Consider the following transcript: "I was thinking {uh} of going to that {um} movie tonight". Which of the following *predictions* would be most consistent with Clark & Fox Tree (2002)?

1. **The delay before "of" should be shorter than the delay before "movie".**
2. The delay before "of" should be longer than the delay before "movie".
3. There should be no difference in the length of delay before "of" or "movie".
4. The comprehender will respond to the statement with a try-marker.

Conversations succeed in part because:

1. **They have dedicated systems for managing turns.**
2. The content of conversations is planned in advance.
3. The order of turns in a conversation is pre-specified.
4. Contributions to conversation are typically complete sentences, which are easier to parse than fragmentary input.
5. They follow a maximal gap, minimal overlap principle.

WEEK 7-8: PRAGMATICS

According to politeness theory, a request's "weightiness" is determined by several factors. What is *not* explicitly included in these factors?

1. **The urgency of the request**
2. The power relationship between the requester and recipient
3. The social distance between the requester and recipient
4. The degree of imposition of the request

Consider the following exchange between Pam and Ana:

Pam: "Are you nervous about your talk?"

Ana: "I think I have a rock in my shoe."

Which of the following maxims does Ana's response violate,if any?

1. **Relation**
2. Quality
3. Quantity
4. Manner
5. No maxims are violated.

Grice argued that many meanings are *implicit*, but that communication succeeds because:

1. **Speakers and comprehenders each assume the other is being cooperative.**
2. Speakers and comprehenders engage in rapid turn-taking.
3. Comprehenders perform rich simulations of the linguistic input they receive.
4. Speakers prefer to use a single signal (e.g., "ba") to express every meaning they'd like to convey.
5. Comprehenders prefer a distinct signal for every possible meaning.

(T/F) According to Trott & Bergen (2018; 2020), a comprehender's decision of whether a speaker is making a request depends in part on the speaker's knowledge of whether or not there is an obstacle to fulfilling the request.

1. **True**
2. False

Which of the following is an example of scalar implicature?

1. **Inferring that a movie critic's review of a movie as "adequate" implies that they didn't love the movie.**
2. Inferring that the response "I have to study for an exam" is a rejection to a proposed offer to hang out, because it violates a Gricean maxim.
3. Inferring that a speaker is uncooperative because they have said something untrue.
4. Inferring that the order in which events are described corresponds to the order in which they happened.

Which of the following pieces of evidence, if true, would be ***most inconsistent*** with politeness theory's predictions about requests?

1. **Very indirect requests (e.g., "I don't have a ride to the airport") are more likely to be perceived as rude.**
2. Very indirect requests (e.g., "I don't have a ride to the airport") are more likely to be produced by an employee to their boss than vice versa.
3. Very indirect requests (e.g., "I don't have a ride to the airport") are more likely to be produced when the degree of imposition is very large.
4. Very indirect requests (e.g., "I don't have a ride to the airport") are equally likely to be produced in urgent as non-urgent situations.
5. Very indirect requests (e.g., "I don't have a ride to the airport") are more likely to be understood as requests when produced by a distant stranger than a close friend.

According to Kelly (1999), nonverbal cues like gesture and eye gaze help signal:

1. **That the speaker is making a request (but not necessarily what the speaker wants).**
2. What the speaker wants (but not necessarily that they're making a request).
3. That the speaker is making a request, and what they want.
4. These cues do not provide additional information beyond the content of speech.

WEEK 6: METAPHOR

Suppose that a monolingual Aymara speaker is referring to an event that happened five years ago. How would you expect them to gesture while describing this event?

1. **They would likely gesture towards the space in front of them.**
2. They would likely gesture towards the space behind them.
3. They would likely gesture towards the space above them.
4. They would likely gesture towards the space below them.
5. They are unlikely to gesture at all.

Conceptual metaphor theory is argued by some to offer a solution to:

1. **The problem of abstract concepts**
2. The Gavagai problem
3. The word segmentation problem
4. The poverty of the stimulus
5. The minimal gap, minimal overlap paradox
6. The illusory transparency of intention

(T/F) Speakers of Dutch and Farsi differ in the metaphors they use to *talk* about pitch.

1. **True**
2. False

(T/F) Speakers of Dutch and Farsi both *think* about pitch in terms of height, as shown by interference tasks.

1. True
2. **False**

Consider the following sentences about the mind: "My mind is so empty today"; "My head is full of thoughts"; "I'm bursting with ideas". What metaphor system is operating here?

1. **Source = Container; Target = Mind**
2. Source = Mind; Target = Container
3. Source = Resource; Target = Mind
4. Source = Mind; Target = Resource
5. There is no metaphor system

Which of the following statements best characterizes cross-linguistic differences in spatial metaphors for time?

1. **All known languages use spatial metaphors for time, but they map the past/future onto different axes.**
2. All known languages use spatial metaphors for time, with the future corresponding to "the front" and the past corresponding to "behind".
3. There are many languages that don't use spatial metaphors for time at all.
4. All known languages use only the sagittal spatial axis (front/back) for describing time.
5. Although languages vary in how they *talk* about time, speakers of those languages all seem to *think* about time the same way.
6. Variability in spatial metaphors for time is uncorrelated with variability in writing directions.

Suppose we ran a conceptual replication of Boroditsky et al (2010) on Hebrew speakers, who describe the past as "to the right" and the future as "to the left". Participants are shown two pictures, and are then asked to indicate which picture happened first, either by pressing the RIGHT or LEFT key. We manipulate the key mappings across two conditions (e.g., RIGHT = earlier vs. RIGHT = later). Which of the following results would be ***inconsistent*** with the claim that spatial metaphors structure how we think about time?

1. **Hebrew speakers are faster to respond when RIGHT = later.**
2. Hebrew speakers are faster to respond when RIGHT = before.
3. Hebrew speakers are faster to respond when the mapping corresponds to the canonical way of describing time in their language.

WEEK 5: DISTRIBUTIONAL SEMANTICS

The linguistic distributional hypothesis states that the degree of semantic similarity between two expressions can be modeled as a function of:

1. **The similarity of the linguistic contexts in which they appear.**
2. The degree to which both activate similar sensorimotor representations.
3. The similarity of their phonology (also known as the "iconicity bias").
4. The degree to which both rely on similar embodied metaphors (e.g., the vertical axis), regardless of whether those metaphors manifest directly in language.

What is one potential problem with the hypothesis that word meanings are a function of distributional regularities in word usage?

1. **The symbol grounding problem**
2. The problem of abstract concepts
3. The poverty of the stimulus
4. The problem of the "continuity of the speech stream"
5. The Gavagai problem

Consider the very simple corpus of sentences: "Maurice likes dolphins"; "Maurice likes plants"; "Maurice befriends dolphins"; "Maurice befriends plants"; "Maurice fears sharks"; and "Maurice hates sharks". Which words does "dolphin" co-occur with (excluding "dolphin" itself)?

1. **"Maurice", "likes", and "befriends"**
2. "Maurice", "fears", and "plants"
3. "Maurice", "likes", and "plants"
4. "Maurice", "sharks", and "hates"

Again, consider the same simple corpus of sentences: "Maurice likes dolphins"; "Maurice likes plants"; "Maurice befriends dolphins"; "Maurice befriends plants"; "Maurice fears sharks"; and "Maurice hates sharks". If we represented each word as a *count vector* reflecting how many times it co-occurs with all the other words (i.e., in the same sentence), which of the following pairs of words would have the *most similar vectors*?

1. **"Plants" and "dolphins"**
2. "Plants" and "sharks"
3. "Hates" and "likes"
4. "Sharks" and "hates"
5. "Sharks" and "Maurice"

Landauer & Dumais (1997) asked whether *latent semantic analysis* (LSA) could be used to model judgments about word relatedness. Which of the following best describes their results?

1. **On average, words rated as more related tended to be "closer" in LSA-space than words rated as less related.**
2. On average, words rated as more related tended to be more "distant" in LSA-space than words rated as less related.
3. The LSA model dramatically out-performed human performance on the TOEFL synonym test.
4. The LSA model performed at chance on the TOEFL synonym test.

Performance on the "MNPQ task" is improved when:

1. **The categories are made more semantically coherent with words the participants already know.**
2. The categories are repeated at different intervals.
3. The categories use conceptual metaphors, like TIME is SPACE.
4. The participants are untethered from "grounded" concepts, which often distract them from the task.

(T/F) Like humans, models like GPT-3 show evidence of social biases.

1. **True**
2. False

WEEK 4: EMBODIMENT

Which of the following pieces of evidence is hardest to reconcile with the view that all linguistic knowledge comes from direct sensorimotor experience? (Note: some of these might simply be described as "irrelevant".)

1. **Blind individuals perform similarly to sighted individuals in a task that involves assessing how likely two objects are to have the same color.**
2. Lesions to the visual cortex are correlated with difficulty understanding words about vision.
3. Parts of the brain associated with executing motor actions receive more blood flow while reading words about those motor action.
4. Reading sentences about abstract concepts like time results in activation of parts of the brain associated with navigating space.
5. Applying TMS to the motor cortex facilitates comprehension of action words.

Purely amodal accounts of cognition have a hard time overcoming:

1. **The symbol grounding problem**
2. The poverty of the stimulus
3. The challenge of nativism
4. The word segmentation problem
5. The problem of abstract concepts
6. The Gavagai problem

The "argument from introspection" for embodied accounts is best described as:

1. **When we read language, it often feels like we are simulating the events it describes.**
2. It is more efficient to use a single storage format (e.g., modal) than multiple formats (e.g., both modal and amodal).
3. Free-floating mental symbols must be tethered to something meaningful.
4. We can understand abstract concepts, even though, by definition, they are impossible to perceive.

(NOTE: The following scenario will be revisited for several questions.)

Suppose we are interested in whether people simulate the implied shape of an object. Participants read sentences like "The lobster was in the sea" (e.g., a living creature) vs. "The lobster was on the plate" (e.g., a dish for dinner). Later, they are shown pictures of different objects, and are asked whether these pictures appeared in the sentences they read before. Some of these pictures match the orientation from before, while others don't. We measure subjects' *d-prime* (**d'**), a kind of measure of recall accuracy. What are the dependent and independent variables?

1. **Dependent = d-prime; independent = match/mismatch**
2. Independent = d-prime; dependent = match/mismatch
3. Dependent = reaction time; independent = match/mismatch
4. Independent = reaction time; dependent = match/mismatch

Suppose we are interested in whether people simulate the implied shape of an object. Participants read sentences like "The lobster was in the sea" (e.g., a living creature) vs. "The lobster was on the plate" (e.g., a dish for dinner). Later, they are shown pictures of different objects, and are asked whether these pictures appeared in the sentences they read before. Some of these pictures match the orientation from before, while others don't. We measure subjects' *d-prime* (**d'**), a kind of measure of recall accuracy. If people *do* simulate implied shape, what should we predict about this measure?

1. **D-prime will be higher (i.e., better recall accuracy) when the picture shape matches the implied shape from the sentences.**
2. D-prime will be lower (i.e., worse recall accuracy) when the picture shape matches the implied shape from the sentences.
3. D-prime will not change as a function of the match/mismatch manipulation.
4. People will read sentences faster when the picture shape matches the implied shape from the sentences.
5. People will read sentences more slowly when the picture shape matches the implied shape from the sentences.

Consider the same experiment investigating the simulation of implied shape. If we did find evidence consistent with simulation, what could we conclude from this experimental design?

1. **Some degree of simulation happens, but it's unclear whether it is necessary for comprehension.**
2. Some degree of simulation happens, and it's necessary for comprehension.
3. Some degree of simulation happens, but the study demonstrates that it is purely epiphenomenal.
4. There's no evidence that simulation happens in this study.

Now we run another study. Now, we want to know whether the degree of simulation is larger when the entity described is the *subject* or *object* of a sentence. Thus, some sentences have the entity as the subject ("The lobster was in the sea", "the lobster was on the plate"), and others have the entity as the object ("He caught the lobster", "He ate the lobster"). Which of the following would constitute an *interaction* between Grammatical Role (subject vs. object) and Match Condition (match vs. mismatch)?

1. **People exhibit worse recall for *mismatch* items, but only when the entity is the *subject* of a sentence.**
2. People exhibit worse recall for *mismatch* items in general; they also exhibit worse recall when the entity is the *object* of a sentence in general.
3. People exhibit worse recall for mismatch items, but there is no difference in recall accuracy as a function of Grammatical Role.
4. There is no effect of Grammatical Role or of Match Condition.

Suppose we obtain the following results from this study manipulating both Match/Mismatch and Grammatical Role:

Chart, bar chart

Description automatically generated

Which of the following statements best describes this pattern of results?

1. **A main effect of Match, but no effect of Grammatical Role, and no interaction between them.**
2. A main effect of Match and a main effect of Grammatical Role, but no interaction between them.
3. An interaction between Match and Grammatical Role.
4. A main effect of Grammatical Role, but no effect of Match, and no interaction between them.
5. No main effect of Match or Grammatical Role, but there is a "crossover interaction" between them.

Suppose, instead, we find this pattern of results:

Chart, bar chart

Description automatically generated

Which of the following statements best describes this pattern of results?

1. **An interaction between Match and Grammatical Role.**
2. A main effect of Match, but no effect of Grammatical Role, and no interaction between them.
3. A main effect of Match and a main effect of Grammatical Role, but no interaction between them.
4. A main effect of Grammatical Role, but no effect of Match, and no interaction between them.
5. No main effect of Match or Grammatical Role, but there is a "crossover interaction" between them.

According to lecture, which of the following modalities is *not* associated with as much (or possibly any) embodied simulation?

1. **Olfaction**
2. Vision
3. Audition
4. None: all studies have returned "positive" results on embodied simulation.

WEEK 1: ORIGINS

Which of the following is *not* true of Nicaraguan Sign Language (NSL)?

1. **Signers in NSL are less likely to separate the "manner" and "path" of a motion event than Spanish-speaking gesturers.**
2. Signers in NSL are more likely to separate the "manner" and "path" of a motion event than Spanish-speaking gesturers.
3. Later cohorts of NSL signers display more evidence of compositionality.
4. NSL developed from spontaneous interactions between deaf children with their own homesign systems.

(T/F) Children who are born deaf (without access to a conventionalized sign language) typically learn homesign through explicit maternal instruction.

1. True
2. **False**

According to the cultural transmission view of human language, what is one "linguistic analog" for the biological units of selection (e.g., genes)?

1. **Words and grammar**
2. Sound change and semantic drift
3. Learnability and expressivity
4. Teaching, learning, and imitation

(T/F) Compared to languages with more L2 speakers, languages with a very high proportion of L1 speakers are more likely to have case marking.

1. **True**
2. False

In the bee "waggle dance", the angle of deviation appears to communicate information about the \_\_\_\_\_ of the nectar:

1. **Direction**
2. Distance
3. Quality
4. Smell

Based on our current knowledge, what is one way in which the Campbell's monkey alarm call is different from vervet alarm calls?

1. **The Campbell's monkey alarm call displays some evidence of compositionality.**
2. The vervet alarm call displays evidence of compositionality.
3. The vervet alarm call is entirely learned, whereas the Campbell's monkey alarm call is entirely instinctive.
4. The Campbell's monkey alarm call is entirely learned, whereas the vervet alarm call is entirely instinctive.
5. The vervet alarm call is arbitrary, whereas the Campbell's monkey alarm call is iconic.
6. The Campbell's monkey alarm call is arbitrary, whereas the vervet alarm call is iconic.

According to some researchers, human linguistic knowledge is too rich to be fully explained by learning from direct evidence alone. This is known as the \_\_\_\_\_\_\_\_\_ argument, and is often used to support \_\_\_\_\_\_\_\_ accounts of language origins.

1. **Poverty of the stimulus; nativist**
2. Poverty of the stimulus; anti-nativist
3. Cultural transmission; nativist
4. Cultural transmission; anti-nativist
5. Joint attention; nativist
6. Joint attention; anti-nativist

Suppose a new animal communication system is discovered. Animals in this community use signals to refer to other animals in the immediate environment. However, they are not born with knowledge of the communication system; they also appear to be able to combine signals to refer to new referents. The key limitation is they can't refer to things that aren't immediately co-present. Which design feature of human language does this system *not* clearly display?

1. **Displacement**
2. Learned
3. Compositionality
4. Referentiality

Which of the following pieces of evidence might force us to revise our estimate of when spoken language evolved?

1. **Discovery of a 400K-year-old writing tablet.**
2. Discovery that *Homo erectus* was able to use tools.
3. The ability of bonobos to learn arbitrary, compositional communication systems in the lab.
4. The discovery that songbird song systems are more complex than previously thought.

The "poverty of the stimulus" argument makes at least one specific *empirical* claim. What is this claim? (Note: an empirical claim is distinct from a theoretical premise or conclusion. It means something that can be tested and falsified with real-world data.)

1. **Children learn things for which there is no direct evidence in their linguistic input.**
2. Children rely on domain-general statistical learning rules to acquire linguistic knowledge.
3. Children are born with innate linguistic knowledge.
4. Children rely on embodied experience to map new words to sensorimotor representations.

WEEK 2: LEARNING

Unlike some written languages like English, spoken language:

1. **Forms a continuous "speech stream", making it hard to tell where one word ends and another begins.**
2. Does not exhibit an arbitrary relationship between form and meaning.
3. Exhibits referentiality and abstraction.
4. Clearly separates word boundaries, using devices like "collateral interjections".

Using two different speakers, a researcher plays infants a combination of real words in English that they've already heard, as well as "part-words" assembled out of other English syllables. According to the results of Saffran et al (1996), which stimuli should cause infants to look longer at a particular speaker, and why?

1. **Infants should look longer at "part-words", because the transition probabilities between their syllables are lower.**
2. Infants should look longer at "part-words", because the transition probabilities between their syllables are higher.
3. Infants should look longer at real words, because the transition probabilities between their syllables are lower.
4. Infants should look longer at real words, because the transition probabilities between their syllables are higher.

Which of the following was not one of the mechanisms we discussed for segmenting words in the speech stream?

1. **Relying on learning biases like the "whole-object bias" and "mutual exclusivity bias".**
2. Relying on phonotactic rules to identify which sequences are most likely to be "legal" words of the language.
3. Using transition probabilities to identify possible word boundaries.
4. Using familiar words as "anchors" to carve up the speech stream (like the infant's own name).

When learning new labels, there are many possible referents to which this label could refer. What is this problem sometimes called?

1. **The Gavagai problem**
2. The poverty of the stimulus
3. The word segmentation problem
4. The problem of abstract concepts
5. The challenge of nativism

Based on studies comparing human and animal learning of sequences, statistical learning is most likely:

1. **A domain-general capacity, because animals do exhibit some evidence of statistical learning.**
2. A domain-specific capacity, because animals do not exhibit statistical learning.
3. A domain-specific capacity, because animals do exhibit some evidence of statistical learning.
4. A domain-general capacity, because animals do not exhibit statistical learning.
5. An innate capacity, because computational models like GPT-3 do not display evidence of statistical learning.

(T/F) Word learning is driven by biases like "whole-object" bias, but is not subject to social biases like the perceived reliability of the speaker.

1. True
2. **False**

The basic "meaningful units" in a language system are called:

1. **Morphemes**
2. Words
3. Sentences
4. Phonemes
5. Turns

Which human learning bias is the phenomenon of "fast mapping" in dogs most closely associated with?

1. **Mutual exclusivity bias**
2. Whole-object bias
3. Speaker reliability bias
4. Iconicity bias
5. Morphology bias

Which of the following words contains a *derivational affix*?

1. **Baker**
2. Tables
3. Kicked
4. Baby

What is one challenge to the purely rule-based account of morphology?

1. **Children are able to learn irregular verbs.**
2. Children seem to generalize morphemes to new words they haven't seen before (e.g., "wug" + "s" = "wugs").
3. Many aspects of morphology can be described in terms of formal rules, almost like a computer program.
4. During language learning, children sometimes "over-regularize" certain verbs (e.g., they conjugate the past tense of "go" as "goed").

WEEK 3: ICONICITY

In English, many words beginning with "gl-" have meanings relating to LIGHT or VISION. This appears to violate the principle of:

1. **Arbitrariness**
2. Compositionality
3. Phonaesthemes
4. Sound symbolism
5. Abstraction

According to research discussed in class, iconic words are:

1. **More likely to be learned earlier during development.**
2. Extremely common, e.g., more than ~95% of the lexicon.
3. Harder to learn than arbitrary words.
4. Better suited to conveying abstract concepts than arbitrary words.

According to research discussed in class, iconic communication systems:

1. **Display less flexibility than arbitrary communication systems.**
2. Help scaffold our understanding of abstract concepts.
3. Tend to emerge out of more arbitrary communication systems, i.e., there is a "drift towards iconicity".

(T/F) Words referring to abstract concepts are not particularly common.

1. True
2. **False**