

The Cognitive Mechanisms Of Evaluating Information Validity And Its Linguistic Conceptualization In The Human Mind

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ABSTRACT

This research investigates the complex cognitive operations involved in how the human mind evaluates the truth-value of received information and subsequently projects it into explicit linguistic structures. Situated at the intersection of cognitive linguistics, psycholinguistics, and mental spaces theory, the article unpacks the mental trajectories that occur between pure sensory or logical perception and verbal execution. The study treats epistemic modality not merely as a surface-level grammatical ornament, but as the final product of deep-seated cognitive mechanisms such as conceptual integration, cognitive framing, and mental profiling. By examining the cognitive pathways through which speakers calculate probability, certainty, and doubt, this paper demonstrates how internal neurological convictions are systematically translated into socially decodable semantic formulas.

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Issue. How does the human brain calculate the truth-value of an idea, and how does it translate that invisible mental calculation into a physical sentence that others can understand?

The core problem at the heart of this research lies in the gap between human thought and human language. Every day our minds are flooded with new information: rumors from friends, news online, physical changes in the environment, and logical guesses about the future. The moment any piece of information enters consciousness, the brain cannot remain passive. It immediately runs a high-speed, invisible validation check to determine how reliable the data is. We constantly ask ourselves whether a statement is a solid fact, a strong possibility, or an outright falsehood.

The real mystery, however, is not only how the brain performs this calculation, but what happens next. A feeling of certainty or a wave of doubt is simply a temporary chemical and psychological state inside an individual's head. It has no physical shape. For that internal feeling to become useful in the real world, the mind must undergo a radical transformation. It has to take the invisible, non-verbal judgment and wrap it inside the rigid rules of human grammar, converting a messy psychological emotion into a linear sequence of spoken words.

This creates a major cognitive challenge because different languages force the mind to build that sentence according to completely different architectural blueprints. If a speaker is using English, the brain looks outside the main action and finds separate, isolated words—modal verbs or adverbs—to label the level of confidence. If the speaker is using Uzbek, the brain does something quite different: it welds that feeling directly into the verb itself by means of specific suffixes.

The fundamental issue we are investigating is therefore this hidden, step-by-step cognitive journey. We need to unpack exactly what happens in the human mind during those split seconds between pure sensory perception and verbal execution. How does the brain build an internal map of reality, measure the gaps of

what it does not know, and then select the exact linguistic keys needed to unlock that thought so another human being can decode it? By answering this question we can see that grammar is not merely a dry set of school rules, but a direct, living window into the real-time processing of the human mind¹.

Rule. To understand the bridge that connects a silent internal judgment to an explicit verbal statement, we must examine the objective laws of cognitive grammar and psycholinguistics. The human mind does not select linguistic structures at random. It follows strict, universal architectural guidelines when translating abstract thought into structured speech. In cognitive linguistics this internal translation process is governed by three fundamental, interlocking rules that dictate how semantic meaning is built, merged, and finally adapted to the structural boundaries of a speaker's native grammar.

The first rule is the law of mental space construction. The human brain manages incoming information by placing it into dynamic, temporary conceptual packets known as mental spaces². The moment an idea or observation enters consciousness, the mind automatically creates a foundational base space (also called the reality space) that represents the network of facts the speaker currently accepts as true. If a new piece of data is fully verified and causes no intellectual friction, it is integrated into this primary space with minimal cognitive effort. As soon as any element of unreliability, missing evidence, or possible alternative appears, the brain activates a separate epistemic alternative space. This secondary space functions as a conceptual sandbox in which the mind runs simulations of what might or could be true. The psychological distance between the reality space and the alternative space determines the speaker's subjective confidence level long before any specific words are chosen.

The second rule is the principle of conceptual integration (or conceptual blending). It determines how the mind combines different conceptual inputs into a single manageable package that can be externalized through speech³. A sentence that expresses a fine shade of certainty or doubt is never a simple description of a physical event; it is an intricate conceptual blend. The brain takes the raw input of the physical event and blends it with the calculated epistemic value derived from the mental-space validation process. These two strands of thought are projected into a separate blended space, where a new emergent structure is born. This is why speakers can pack complex psychological nuances—such as simultaneously hoping for an outcome while deeply doubting its occurrence—into a short verbal phrase. Conceptual integration keeps human speech highly condensed and allows us to broadcast our inner cognitive state with minimal neurological and phonetic effort.

The third rule is the constraint of typological profiling. It defines how the mind prepares the blended conceptual package for physical delivery according to the mandatory rules of the speaker's native grammar. In cognitive grammar, profiling is the act of highlighting a specific aspect of a conceptual scene while backgrounding other details. The brain is restricted during this phase by typological boundaries, so the mental processing route depends entirely on the structural nature of the language being spoken. If the language is analytical, like English, the profiling mechanism forces the cognitive system to search for independent lexical items, standalone modal verbs or adverbs to serve as separate markers of stance. If the language is agglutinative, like Uzbek, the same mechanism is bound by a different architecture and forces the brain to compress the epistemic evaluation into a morphological suffix that must be fused directly onto the predicate. While the cognitive calculation of truth is a universal human trait, the final linguistic blueprint is strictly dictated by the grammatical architecture of the language being spoken.

Application. To see these hidden laws in action, we must examine how the human brain processes identical levels of uncertainty and transforms them into two completely different linguistic formats depending on whether the speaker's cognitive system is rooted in English or Uzbek. When a speaker is presented with a non-verified scenario, for example, wondering whether a third party is currently inside an office – the neuro-cognitive validation protocol calculates an identical amount of distance between the Reality Space and the

¹Leonard Talmy, *Toward a Cognitive Semantics*, vol. 1 (Cambridge: MIT Press, 2000), 211.

²Gilles Fauconnier, *Mental Spaces: Aspects of Meaning Construction in Natural Language* (Cambridge: Cambridge University Press, 1994), 73.

³Gilles Fauconnier and Mark Turner, *The Way We Think: Conceptual Blending and the Mind's Hidden Complexities* (New York: Basic Books, 2002), 40–50.

Epistemic Alternative Space. At that moment the raw abstract feeling of “strong but unverified probability” is the same in the human brain regardless of nationality. However, as soon as this cognitive blend is pushed toward verbal execution, the constraint of typological profiling takes over and forces the English mind and the Uzbek mind to travel down separate linguistic pathways.

An English-speaking mind, operating under a strictly analytical framework, processes the conceptual blend by physically separating the epistemic evaluation from the factual core of the event. To express a high-level logical deduction, the brain profiles the subjective stance by selecting the independent modal auxiliary *must* and placing it before the main verb, resulting in the utterance “He must be in the office.” In this configuration the core action of “being in the office” remains a distinct, unaltered semantic unit, while *must* functions as an external marker that signals the speaker’s truth-guarantee to the listener⁴. If the cognitive validation protocol detects a sudden drop in evidence, the English mind simply discards *must* and selects *might* or *may* instead. This rapid lexical substitution allows the English speaker to calibrate the degree of commitment with high logical precision and keeps the personal stance visibly detached from the objective proposition.

An Uzbek-speaking mind encounters the same cognitive blend but is forced by its agglutinative architecture to execute a different mapping strategy. Instead of looking outside the action for independent words, the profiling mechanism systematically compresses the epistemic valuation and welds it directly into the morphological body of the predicate. When the Uzbek speaker says “U ishxonasidadir,” the suffix *-dir* is not added as an isolated semantic label; it is structurally and phonetically fused into the word that establishes the location⁵.

This internal synthesis becomes even clearer when the brain handles deeper levels of doubt or expectation through complex constructions such as *-sa kerak*. In the phrase “U kelgan bo‘lsa kerak,” the Uzbek mind takes the input space of a completed action, passes it through a conditional filter, and wraps it around an auxiliary noun of necessity, delivering the entire psychological stance as a single, indivisible verbal package⁶. The result is a radically different cognitive parsing model for the listener. While the English system allows the listener to separate the fact from the confidence level, the Uzbek system delivers the objective reality and the subjective evaluation as one cognitive entity. In this way our grammatical blueprints actively dictate how we slice, package, and broadcast the validity of our thoughts to the world.

Conclusion. The scientific exploration of how the human brain evaluates information validity and maps it onto structured language leads to a clear cross-disciplinary conclusion⁷. Epistemic modality, which appears on the surface of speech as modal verbs, adverbs, or suffixes, is never a random stylistic ornament or a dry set of arbitrary grammatical choices. Every sentence that expresses certainty or doubt represents the visible crystallization of highly complex, sub-second neuro-cognitive computations that take place deep within the subconscious long before an utterance is articulated. The brain functions as an active predictive validation engine that constantly compartmentalizes reality, measures cognitive gaps, and runs simulations through mental spaces in order to calibrate its precise degree of commitment to a given truth-value⁸.

The English analytical mind approaches the cognitive blend by maintaining a clear rhetorical distance, selecting external lexical items that isolate the subjective stance from the factual claim and thereby supporting calculated individual accountability and logical precision⁹. The Uzbek agglutinative mind executes a synthetic strategy that morphologically welds the epistemic judgment directly into the architecture of the predicate, delivering reality and evaluation as a single cohesive package optimized for interpersonal harmony, relational management, and the cultural codes of modesty¹⁰.

⁴Joan Coates, *The Semantics of the Modal Auxiliaries* (London: Croom Helm, 1983), 61.

⁵Nizomiddin Mahmudov, *Tilning mukammal tadqiqi yo‘llarida...* (Toshkent: Mumtoz so‘z, 2012), 83.

⁶Shahriyor Safarov, *Pragmalingvistika* (Toshkent: O‘zbekiston Milliy ensiklopediyasi, 2008), 112.

⁷Talmy, *Toward a Cognitive Semantics*, 211–215.

⁸Fauconnier, *Mental Spaces*, 73–80.

⁹Coates, *The Semantics of the Modal Auxiliaries*, 61–65.

¹⁰Mahmudov, *Tilning mukammal tadqiqi yo‘llarida...*, 83–85.

Ultimately, this research demonstrates that grammar is not merely a passive conduit for transferring thoughts. It is an active processing blueprint that dictates how human consciousness packages and brands the validity of its ideas for social consumption. By unpacking these hidden cognitive pathways we bridge the longstanding gap between pure psycholinguistic processing and external pragma-linguistic behavior. Understanding these deep-seated mental operations provides a key to decoding how human beings navigate authority, manage skepticism, and establish social connections across different civilizations. The structural rules of our respective languages are living maps of how the human mind attempts to capture, negotiate, and broadcast the elusive nature of truth.

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