

Presupposition Accommodation

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"In space, no one can hear you think."

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1 Presupposition Accommodation

1.1 The Phenomenon of Presupposition

Human communication operates not merely through the explicit statements we utter, but profoundly through the intricate lattice of unspoken assumptions we effortlessly share and accept. This foundational, often invisible, layer of shared background knowledge is the domain of **presupposition**, a linguistic phenomenon as essential to conversation as air is to breath. Presupposition is the bedrock upon which assertions are built, the silent partner to explicit meaning. Consider the simple utterance, “John stopped smoking.” While the speaker explicitly *asserts* that John is no longer smoking, they simultaneously *presuppose* something crucial: that John smoked in the past. This backgrounded information is not presented as new or debatable; it is treated as already established, a common understanding between speaker and listener. The listener understands not only the assertion about the present cessation but automatically accepts the presupposed past habit as part of the shared conversational fabric. This process of accepting and integrating these unspoken assumptions is known as **accommodation**, a remarkable cognitive and pragmatic feat fundamental to the fluidity of human interaction. Without presupposition and the cooperative mechanism of accommodation, everyday conversation would falter under the weight of constant clarification, becoming a tedious and fragmented exchange. This section establishes the core concepts of presupposition and accommodation, exploring their definitions, the challenges they pose, and the ingenious solution accommodation provides, setting the stage for understanding their profound importance in the architecture of language.

Defining presupposition requires distinguishing it from the more overt act of assertion. While an assertion presents new information as the main point of an utterance, a presupposition is information that the speaker presents as taken for granted, as background that must be accepted for the utterance to even make sense. Crucially, presuppositions exhibit **constancy under negation**. If we negate our example, saying “John did *not* stop smoking,” the presupposition remains intact. The negation challenges the assertion that John ceased the activity, but it doesn’t challenge the presupposition that he smoked in the past – if anything, it reinforces it. This resilience extends beyond negation. Embedding the utterance within a question (“Has John stopped smoking?”) or a modal context (“John might stop smoking”) still triggers the presupposition that he used to smoke. Identifying presupposition triggers – specific linguistic elements that conventionally introduce presuppositions – is key. These triggers are remarkably diverse. **Factive verbs** like “know,” “realize,” “regret,” and “discover” presuppose the truth of their complement clause (“Mary *regrets* that she lied” presupposes Mary did lie). **Iterative adverbs** like “again,” “also,” and “too” presuppose a prior occurrence (“The printer jammed *again*” presupposes it jammed before). **Change-of-state verbs** like “start,” “stop,” “continue,” and “arrive” presuppose a prior state (“The meeting *started*” presupposes it wasn’t happening before). **Definite descriptions** (“The cat is on the mat”) presuppose the existence and often uniqueness of the referent (there *is* a specific cat). **Cleft constructions** (“It was John who ate the cake”) presuppose the underlying proposition minus the focused element (someone ate the cake). This rich tapestry of triggers allows speakers to seamlessly weave vast amounts of backgrounded information into their utterances, relying on the listener’s ability to recognize and process these cues implicitly.

However, this elegant system faces a significant challenge: **presupposition failure**. What happens when the background assumption triggered by the speaker is demonstrably false, unknown, or contradictory? The most famous philosophical illustration is Bertrand Russell’s analysis of “The present King of France is bald,” uttered during a time when France had no monarchy. Russell, in his 1905 paper “On Denoting,” argued that such a sentence is simply *false*. He treated the definite description “The present King of France” not as directly referring to an entity whose existence is presupposed, but as a complex quantificational phrase meaning “there exists one and only one King of France, and that individual is bald.” Since the existence clause is false, Russell concluded the entire proposition was false. Peter Strawson, in his influential 1950 critique “On Referring,” vehemently disagreed. He argued that Russell confused referring with asserting existence. For Strawson, “The present King of France is bald” doesn’t *assert* the King’s existence; it *presupposes* it. If the presupposition fails (there is no King), the utterance isn’t false; it is fundamentally **infelicitous** or **truth-valueless** – it misfires because the necessary precondition for its meaningful assertion (the existence of the referent) is absent. Strawson saw the utterance as attempting to refer to something that doesn’t exist, rendering it meaningless in a referential sense, not merely false. This debate highlighted a crucial puzzle: how can conversation proceed smoothly when speakers routinely embed assumptions that may not be part of the shared common ground? Russell’s solution denied the special status of presupposition, while Strawson acknowledged the problem but left the mechanism for resolving it undefined. The need for a pragmatic solution – a way for listeners to bridge the gap when presuppositions aren’t already shared – became increasingly apparent.

This solution is **presupposition accommodation**, a concept formally introduced by philosopher David Lewis in his seminal 1979 paper “Scorekeeping in a Language Game.” Lewis built upon the work of Robert Stalnaker, who conceptualized conversation as operating within a dynamic **common ground** – the set of propositions mutually believed by the participants to be mutually accepted for the purpose of the conversation. Stalnaker defined a presupposition of an utterance as a proposition that must be part of this common ground *before* the utterance can be felicitously made and assessed. Lewis refined this by asking: what happens when a speaker makes an utterance that presupposes something *not* currently in the common ground? His answer was accommodation: “If at time *t* something is said that requires presupposition *P* to be acceptable, and if *P* is not presupposed just before *t*, then – ceteris paribus and within certain limits – presupposition *P* comes into existence at *t*.” In essence, listeners, adhering to the **Cooperative Principle** outlined by Paul Grice (which posits that participants generally try to contribute appropriately to the conversation’s goals), will often silently and automatically *adjust* the common ground to include the presupposed information, allowing the conversation to proceed without hiccups. This is not blind acceptance; accommodation operates under constraints, primarily that the presupposed information must be **plausible** and **not overtly contradictory** to established common ground. Consider the everyday example: Alice walks into a room and says to Bob, “My sister is visiting this weekend.” If Bob knows nothing about Alice’s family, the definite description “my sister” triggers the presupposition that Alice has a sister – information not previously in their common ground. Barring any reason to doubt this (it’s plausible, Alice is a reliable source on her own family), Bob will typically *accommodate* this presupposition. He updates his mental model of the common ground to include “Alice has a sister,” allowing him to understand and respond to the assertion about the visit. This

process happens near-instantly and unconsciously in most routine interactions, demonstrating the remarkable efficiency of cooperative communication. Accommodation is the pragmatic glue that allows speakers to introduce new background assumptions seamlessly, transforming potentially problematic utterances into vehicles for expanding shared understanding.

Thus, presupposition emerges not as a mere semantic curiosity, but as a vital engine driving conversational efficiency, allowing speakers to pack layers of meaning into concise utterances. Its counterpart,

1.2 Historical Foundations and Conceptual Evolution

Building upon the essential groundwork laid by Lewis’s introduction of accommodation as the pragmatic solution to presupposition failure, a deeper appreciation of this mechanism requires tracing its intellectual lineage. The journey reveals how profound philosophical inquiries into language, reference, and truth gradually converged with emerging pragmatic insights, setting the stage for accommodation’s formal articulation. The seemingly effortless act of a listener silently accepting “Alice has a sister” rests upon centuries of conceptual evolution concerning what it means for language to connect to the world and to shared understanding.

The seeds of presupposition theory were sown in the fertile ground of late 19th and early 20th-century analytic philosophy, particularly in the work of Gottlob Frege and Bertrand Russell. Frege’s seminal distinction between *Sinn* (sense) and *Bedeutung* (reference), articulated in works like *Über Sinn und Bedeutung* (1892), provided the first crucial insight relevant to presupposition. For Frege, the *sense* of an expression is its mode of presentation, the way in which it conceives of its referent, while the *reference* is the actual object or truth-value in the world. Crucially, Frege observed that certain expressions, like definite descriptions (“the inventor of bifocals”), carry implications about existence and uniqueness as part of their very sense. He argued that if a definite description lacks a referent (if there is no unique inventor of bifocals, or, famously, if “Odysseus” has no referent in reality), then any sentence containing it lacks a truth-value altogether – it is neither true nor false. This intuition, where the *meaningfulness* of an assertion depends on the satisfaction of background conditions (the existence and uniqueness of the referent), directly foreshadowed the concept of presuppositional failure. Frege’s example of “Kepler died in misery” presupposing that the name “Kepler” refers to something, illustrated this inherent linkage between reference and a background guarantee of existence. However, Frege primarily framed this within a static semantic framework, concerned with timeless propositions rather than the dynamic flow of conversation.

Bertrand Russell, reacting partly to what he saw as flaws in Frege’s approach (particularly the problem of non-referring names and descriptions leading to truth-value gaps), proposed a radically different analysis in his landmark 1905 paper “On Denoting.” Russell vehemently rejected the idea that definite descriptions functioned as referring expressions in the manner Frege suggested, especially when no referent existed. For Russell, a phrase like “the present King of France” was not a singular term presupposing existence, but rather a complex existential quantification disguised by grammar. His theory of descriptions translated “The present King of France is bald” into the logical assertion: “There exists an entity x such that x is King of France, and for all y , if y is King of France then y is identical to x , and x is bald.” The crucial point was that the existence and uniqueness claims were *asserted*, not presupposed. Therefore, if no King of France existed (as was the

case when Russell wrote), the first conjunct (“there exists an entity x such that x is King of France”) was false, making the entire proposition false. Russell’s approach eliminated truth-value gaps by absorbing the existential commitment into the asserted content itself, effectively denying the special, backgrounded status of presupposition. He famously dismissed Meinong’s ontology of “non-existent objects,” arguing that logic should not traffic in entities lacking being. While powerful, Russell’s analysis felt counterintuitive to many. The sentence “The King of France is bald” doesn’t *feel* like it’s primarily asserting the existence of a King; it feels like it’s taking that existence for granted and making a claim about his hair, precisely failing when the existence condition isn’t met.

This counterintuitive aspect became the focal point of Peter Strawson’s influential 1950 critique, “On Referring.” Strawson championed the distinction Russell had collapsed: the difference between *mentioning* or *referring* to something (which relies on the thing existing) and *asserting* that it exists. For Strawson, a sentence like “The King of France is wise” is used to *refer* to a particular individual and then *say* something about him. This act of reference fundamentally *presupposes* the existence of that individual. If the presupposition fails (no such King exists), the act of reference itself misfires. Consequently, the question of whether the statement “The King of France is wise” is true or false simply *does not arise*; the statement lacks a truth-value because it fails to make a coherent claim about the world. Strawson argued that Russell confused sentences (abstract linguistic types) with the *use* of sentences in specific contexts (utterances). An utterance of “The King of France is wise” *in a context where France has no king* is not false; it is infelicitous, inappropriate, or nonsensical precisely because its presupposition fails. Strawson thus firmly established presupposition as a distinct semantic or pragmatic phenomenon separate from assertion and entailment, highlighting the context-dependent nature of meaning and the problem of presupposition failure that accommodation would later resolve. His work shifted the focus towards the *use* of language in context, paving the way for a pragmatic understanding.

The stage was now set for the **pragmatic turn**, led by Robert Stalnaker in the early 1970s. Stalnaker, drawing inspiration from Paul Grice’s work on conversation, introduced the concept of the **common ground** as the central construct for understanding discourse dynamics. He defined the common ground not as a static set of truths, but as the set of propositions mutually *believed* by the participants in a conversation, and mutually *recognized* as being so believed, for the purposes of that conversation. Crucially, Stalnaker conceptualized conversation itself as a cooperative activity aimed at incrementally updating this shared common ground. Each utterance is understood as a proposal to add its content (or some related content derived via implicature) to this shared set of mutual beliefs. Within this dynamic framework, Stalnaker offered a precise pragmatic definition of presupposition: **a proposition P is presupposed by a speaker making an utterance if the speaker believes or assumes that P is already part of the common ground mutually shared with the hearer(s) at the time of the utterance.** The presupposition is thus a *precondition* for the appropriate utterance. An utterance is felicitous only if its presuppositions are already satisfied in the common ground. For example, saying “Cancel the meeting!” presupposes that a meeting is scheduled. This makes sense only if the speaker assumes this fact is already mutually accepted by all participants. Stalnaker’s model brilliantly reframed presupposition failure: it occurred not when a proposition was false *in the

1.3 Cognitive Mechanisms and Processing

While Stalnaker and Lewis provided the elegant conceptual framework of the common ground and accommodation as a conversational update mechanism, a crucial question remained: how is this abstract process instantiated in the human mind during the rapid, fluid exchange of everyday conversation? Understanding presupposition accommodation demands shifting from philosophical and pragmatic theory to the realm of cognitive science, exploring the real-time mental computations that allow listeners to effortlessly accept and integrate presupposed information within milliseconds. This section delves into the cognitive architecture underpinning accommodation, examining the speed and effort involved, how accommodated knowledge is woven into the fabric of discourse memory, and the intriguing variations observed across individuals.

The Online Processing Challenge confronts the sheer speed at which accommodation occurs. Psycholinguistic research using sensitive online measures reveals that listeners don't passively wait for the end of a sentence to handle presuppositions; they process them incrementally, as the words unfold. Consider an eye-tracking study where participants view a scene containing various objects while hearing a sentence like "Finally, the mechanic fixed the lock." The definite description "the lock" presupposes the existence of a specific, identifiable lock. Crucially, if the scene initially contains *no* lock, participants' eye movements reveal a rapid, often unconscious search for a suitable referent within a few hundred milliseconds of hearing the trigger word "the," demonstrating the immediacy of the presupposition resolution process. When no lock is found, a characteristic processing cost emerges, measurable as increased reading times or specific brainwave patterns in Event-Related Potential (ERP) studies. The N400 component, typically associated with semantic integration difficulty, shows an enhanced negativity when a presupposition is implausible or conflicts with prior context (e.g., hearing "Continue stirring the sauce" when no sauce had been mentioned before). Furthermore, if the presupposition failure is syntactically jarring or requires significant context repair, a later P600 component, often linked to syntactic reanalysis or integration complexity, may also be elicited. Distinguishing accommodation from related inferences is key. While bridging inferences (inferring a connection, like "the cup" presupposing a saucer might be nearby based on world knowledge) can be effortful and delayed, pure presupposition accommodation triggered by conventional linguistic forms (like "stop" or "again") tends to be more automatic and rapid. However, this automaticity is modulated by cognitive load and context. Accommodating highly plausible information in a supportive context may be near-effortless, while accommodating implausible information (e.g., "John stopped breathing helium") or doing so under high working memory load (e.g., while remembering a complex number sequence) significantly increases processing demands, reflected in slower reaction times and reduced comprehension accuracy. This highlights that accommodation, while often seamless, is a cognitively active process sensitive to the content and conditions of utterance.

Memory and Context Integration is where the accommodated information becomes a stable part of the listener's mental representation of the discourse. Once accepted, the presupposed proposition must be integrated into the evolving **mental model** – the internal representation of the situation, events, entities, and relationships being described. Working memory plays a pivotal role as the workspace where incoming linguistic input interacts with the current mental model and relevant knowledge retrieved from long-term

memory. Successful accommodation involves updating this mental model to include the new entity or fact presupposed by the trigger. For instance, upon hearing “Despite the rain, Mary continued hiking,” the listener accommodates the presupposition that Mary was already hiking *before* the rain started, seamlessly integrating this prior activity into their timeline of events for Mary. Research suggests that information gained through accommodation is treated similarly to information explicitly asserted earlier in the discourse for subsequent reference. A listener who accommodates the existence of “John’s sister” from an utterance like “John’s sister is visiting” can later felicitously refer back to her as “she” or “his sister,” indicating that the accommodated entity has been assigned a stable **discourse referent** and integrated into the discourse structure. The cognitive status of referents introduced via different triggers varies. Accommodating a unique entity via a definite description (“the solution”) might establish it as uniquely identifiable, while accommodating a fact via a factive verb (“John knew it was wrong”) establishes that fact as backgrounded but accepted truth. Neuroimaging studies using fMRI point to a network of brain regions supporting this complex integration. The left inferior frontal gyrus (LIFG), particularly Broca’s area, is frequently implicated in semantic integration and resolving referential dependencies, crucial for handling presupposition triggers. The dorsomedial prefrontal cortex (dmPFC) and temporoparietal junction (TPJ), areas associated with theory of mind and maintaining shared knowledge states, show activation during tasks requiring common ground management, including accommodation. Furthermore, the hippocampus, vital for forming new episodic memories, may be involved in binding the newly accommodated information into the ongoing discourse representation. This neural orchestration ensures that the silently accepted background becomes a functional part of the shared cognitive landscape.

Individual Differences reveal that the seemingly universal fluency of accommodation masks significant variability in how readily and effectively different individuals perform this cognitive feat. Cognitive style and capacities are key determinants. Individuals with higher **working memory capacity** generally demonstrate greater ease in accommodating presuppositions, especially when the information is complex, the context is ambiguous, or the accommodation requires significant updating of the mental model. They are better equipped to hold multiple pieces of information active while integrating new presupposed content. Conversely, individuals under cognitive load or with naturally lower working memory span may show delayed accommodation, increased rates of presupposition failure detection (sometimes leading to unnecessary clarification requests), or difficulty integrating accommodated information seamlessly. Development provides a fascinating window into the acquisition of accommodation skills. Young children, while remarkably adept at learning language, often struggle with presupposition management. Before the age of 4 or 5, children may fail to accommodate presuppositions triggered by definites or factives if the information wasn’t explicitly mentioned, sometimes treating the presupposed content as entirely new information or questioning it unnecessarily. For example, upon hearing “Is the elephant in the zoo hungry?”, a young child might answer “No!” simply because they saw no elephant earlier, failing to accommodate the presupposed existence triggered by “the elephant.” This improves dramatically through middle childhood as their theory of mind matures (understanding that others have beliefs and knowledge), their working memory capacity expands, and they gain experience with the pragmatic conventions of conversation. This developmental trajectory underscores that accommodation is not merely a linguistic reflex but a sophisticated cognitive and social skill honed over time.

The link to **atypical development**, particularly **Autism Spectrum Disorder (ASD)**, further illuminates the cognitive underpinnings. Individuals with ASD often experience significant pragmatic language difficulties, and challenges with presupposition are a hallmark. They may exhibit reduced propensity to accommodate, tending towards literal interpretations and requiring explicit confirmation of presupposed information more frequently. For instance, they might balk at “Hand me the red cup” if multiple red cups are present, failing to accommodate the uniqueness presupposition implicitly understood by neurotypical listeners, or they might explicitly question the presupposed content of a factive verb (“

1.4 Formal Models and Semantic Frameworks

The remarkable cognitive fluency with which humans accommodate presuppositions, as explored in the preceding section, presents a profound challenge for formal linguistics: how to capture this dynamic interplay between utterance, context, and shared understanding within a rigorous theoretical framework. Moving beyond the philosophical groundwork laid by Frege, Russell, Strawson, Stalnaker, and Lewis, the late 20th century witnessed the emergence of powerful formal semantic systems explicitly designed to model the fluid, context-dependent nature of meaning, with presupposition and accommodation as central concerns. These frameworks shifted the focus from static truth conditions to the dynamic evolution of context itself, providing precise mathematical tools to represent how utterances transform the shared information state of conversational participants.

4.1 Dynamic Semantics: Context Change Potentials marked a revolutionary departure from traditional truth-conditional semantics. Pioneered by Irene Heim in her groundbreaking 1982 dissertation, *The Semantics of Definite and Indefinite Noun Phrases*, and formalized as **File Change Semantics (FCS)**, this approach fundamentally reconceptualized meaning. Heim proposed thinking of the conversational **common ground** not just as a set of propositions, but as a constantly evolving “file” – a structured representation of the discourse context containing all the entities introduced and properties attributed to them thus far. Crucially, the meaning of an utterance was no longer defined solely by its truth conditions relative to a fixed world, but by its **context change potential (CCP)** – its ability to *update* the current context file, transforming it into a new context file. Within this dynamic framework, presuppositions found a natural home as **definedness conditions**. An utterance isn’t merely true or false; it is *felicitous* only if its presuppositions are already satisfied within the current input context file. If the presuppositions hold, the CCP applies, updating the context with the asserted content. If not, the update crashes – the utterance is infelicitous. Consider the utterance “John stopped smoking.” Its CCP is defined only if the input context file already contains the information that John smoked in the past (the presupposition triggered by “stopped”). If this condition is met, the CCP updates the file by adding the information that John is not smoking now. The elegance of FCS lies in its explicit representation of how presuppositions act as preconditions for the successful interpretation and integration of new information. The challenge of presupposition failure is thus reframed as a definedness failure within the update mechanism.

4.2 Discourse Representation Theory (DRT), developed independently by Hans Kamp in 1981 and subsequently refined by Kamp and Uwe Reyle, offered another powerful dynamic framework centered on con-

structuring mental representations of discourse. DRT models the discourse context via **Discourse Representation Structures (DRS)**, which are essentially boxes containing discourse referents (representing entities under discussion) and conditions (representing properties and relations attributed to those referents). As discourse progresses, new sentences contribute to building the DRS, adding referents and conditions. Presuppositions posed a significant puzzle for DRT: how do they project through complex sentences involving negation, conditionals, or modal operators? Karttunen’s seminal 1973 paper “Presuppositions of Compound Sentences” had identified that presuppositions don’t always survive embedding unscathed; they can be “filtered,” “plugged,” or project like “holes.” DRT provided a natural mechanism for this **projection problem** through the process of **presupposition resolution**. When encountering a presupposition trigger, the interpreter attempts to **bind** the presupposed content to an existing element already present within the current DRS or an accessible subordinate DRS. For example, in the sequence “A man walked in. *The man* sat down,” the definite description “the man” triggers a presupposition for a uniquely identifiable man. Resolution succeeds via binding: the presupposed man is identified with the discourse referent introduced by “a man” earlier. Binding is the preferred, economical option. However, if no suitable antecedent can be found within the accessible discourse structure, **accommodation** occurs: a new discourse referent and the required conditions are added to the DRS, typically at the highest level possible (the main DRS) to make the utterance interpretable. Consider the standalone utterance “The cat is hungry.” Since no cat has been mentioned, binding fails. Accommodation steps in, creating a new discourse referent (say, x) and adding conditions like $\text{cat}(x)$ and often an implicit uniqueness condition, thereby updating the context to satisfy the presupposition and allowing the assertion “is hungry” to be processed. DRT thus elegantly integrated presupposition resolution (binding vs. accommodation) into the core process of building discourse representations.

4.3 Accommodation in Dynamic Systems became a primary focus as these frameworks matured, moving beyond Lewis’s informal description to precise formalization. The core question was: how exactly is the context “minimally adjusted” when accommodation is required? Heim’s FCS provided a formal mechanism: when an update crashes due to a presupposition failure, accommodation allows for a *preliminary* adjustment of the input context *before* the original update is attempted again. The guiding principle is **minimal mutilation**: adjust the context in the least disruptive way necessary to satisfy the presupposition. Van der Sandt’s influential 1992 work within a DRT framework formalized this as **accommodation as anaphora resolution**, emphasizing the preference for binding and the constraints on where accommodation can insert the missing information. A critical distinction emerged between **Global Accommodation** and **Local Accommodation**. Global accommodation, the default, involves adding the presupposed information to the *main* context or common ground. In “John stopped smoking” uttered out of the blue, global accommodation adds “John smoked in the past” to the main CG. Local accommodation, however, involves adding the presupposed information only within a *subordinate* part of the context, such as within the scope of negation or a modal operator. Consider the negated sentence “John did *not* stop smoking.” Accommodating “John smoked in the past” globally (adding it unconditionally to the CG) would be inappropriate, as the speaker might be denying both the cessation *and* the prior habit. Local accommodation, adding the presupposition only within the scope of the negation, yields the interpretation: “It is not true that [John smoked in the past and then stopped].” This captures the intuition that negation typically targets the assertion while leaving

the presupposition intact, but allows for readings where even the presupposition is denied. Intermediate accommodation, involving embedding under operators like modals or attitudes, adds further complexity. The **Trapping Problem**, identified by Heim, highlights a key constraint: accommodation cannot create a context where the utterance itself becomes contradictory or necessarily false *after* accommodation. For example, trying to accommodate “John’s children are bald” globally when it’s mutually known John has no children is blocked; the accommodation would create a contradiction (John has children and has no children), trapping the utterance in infelicity. This underscores that accommodation is not a magical fix but a constrained process governed by consistency and plausibility within the evolving dynamic model of the discourse.

The development of dynamic semantics and DRT provided the essential formal machinery to model presupposition accommodation with unprecedented precision, translating the conversational “scorekeeping” metaphor into rigorous update procedures and representation structures. These frameworks demonstrated that meaning

1.5 Constraints and Triggers of Accommodation

The elegant formal machinery of dynamic semantics and Discourse Representation Theory, as explored in the preceding section, provides a powerful apparatus for modeling *how* presupposition accommodation *can* update the common ground or discourse structure. However, these models immediately confront a fundamental reality of human conversation: accommodation is not an unconstrained, automatic process applied indiscriminately to every presupposed element. Listeners are not passive receptacles for any background assumption a speaker might toss their way. Instead, accommodation operates under robust cognitive and pragmatic constraints, and its application varies significantly depending on the type of presupposition trigger employed and the linguistic context in which it appears. Understanding these constraints and variations is crucial for explaining why some presuppositions glide effortlessly into the common ground while others stumble, triggering confusion, rejection, or the infamous “Hey, wait a minute!” response.

Plausibility and Informativeness stand as the twin pillars governing the success of accommodation. As hinted at by Lewis’s “*ceteris paribus* and within certain limits” caveat, the listener’s willingness to silently update the common ground is heavily contingent on the **plausibility** of the presupposed information. Accommodation fails spectacularly when the presupposed content is patently absurd, contradicts established mutual knowledge, or violates deeply held world knowledge. Consider the classic “King of France” scenario. Uttering “The King of France is bald” in the 21st century triggers a presupposition of existence that listeners firmly reject, as it contradicts the well-known fact that France is a republic. The utterance is met not with acceptance of a bald monarch, but with bafflement or correction. Kai von Fintel formalized this intuition with the “Hey, wait a minute!” test: if the presupposed content is such that the listener would immediately object (“Hey, wait a minute! France doesn’t *have* a king!”), then global accommodation is blocked. Plausibility isn’t solely about objective truth; it’s also about subjective likelihood and consistency with the evolving discourse model. Hearing “Susan regrets drinking the sulfuric acid” might trigger accommodation that Susan *did* drink sulfuric acid, but only if the context supports such a bizarre action (e.g., a lab accident narrative). In a mundane coffee chat, this presupposition would likely be rejected as implausible, causing accommoda-

tion failure. **Informativeness** is the complementary constraint. Accommodation is typically blocked if the presupposed information is already part of the common ground or is blatantly obvious to all participants. Redundancy defeats the purpose. If everyone at the meeting knows John has a sister, uttering “John’s sister is visiting” doesn’t require accommodation of “John has a sister”; it’s already satisfied. Attempting to presuppose it again might even sound odd or patronizing. David Beaver emphasized that accommodation functions to *repair* a deficiency in the common ground necessary for the utterance’s felicity. Presupposing what is already mutually known is not a deficiency needing repair; it’s simply redundant. The interplay between plausibility and informativeness ensures accommodation is a cooperative *adjustment*, not a coercive *overwriting*, of shared understanding. The listener acts as a gatekeeper, only admitting presuppositions that are sufficiently likely and non-redundant to justify the silent update.

Projection and the Trigger-Specific Landscape reveals a crucial layer of complexity: not all presupposition triggers are created equal when it comes to their propensity to project through complex sentences and their susceptibility to accommodation. Lauri Karttunen’s seminal 1973 classification of verbs based on their “projection behavior” – how presuppositions survive (project) or get blocked when embedded under operators like negation, modals, or attitude verbs – laid the groundwork for understanding this variation. Karttunen identified three key categories: “**Holes**,” “**Plugs**,” and “**Filters**”. Holes, such as factive verbs (“know,” “regret”), iteratives (“again,” “too”), and change-of-state verbs (“stop,” “start”), allow presuppositions to project freely upwards, passing through negation, questions, and modals unscathed. Negating “John stopped smoking” (“John did *not* stop smoking”) still carries the presupposition that John used to smoke; the hole allows it to project to the main context. Consequently, accommodation for hole triggers often targets the global common ground. Plugs, primarily verbs of saying or reporting (“say,” “announce”), *block* the presuppositions of their complement clauses from projecting to the main context. “Mary announced that her spaceship needed repairs” presupposes that Mary *made an announcement*, but *not* that her spaceship actually needed repairs; the plug (the verb of saying) prevents that lower presupposition from escaping its embedded clause. Accommodation for plugs is typically local, confined within the scope of the plug. Filters, such as conditional (“if...then”) and logical conjunction (“and”), sometimes block projection and sometimes allow it, depending on the content of the clauses they connect. For example, “If John has children, then John’s children are happy” does *not* presuppose that John has children; the antecedent “filters” or satisfies the presupposition triggered by “John’s children” in the consequent. However, “John has children and John’s children are happy” *does* presuppose John has children, as the first conjunct satisfies the trigger in the second. Modern empirical research, building on Karttunen, has refined our understanding of trigger behavior. For instance, definite descriptions (“the cat”) project robustly like holes but are particularly sensitive to local context for antecedent resolution before accommodation is considered. Factive verbs are generally strong projectors, but their strength can be modulated by the subject (compare “The physicist knows that cold fusion works” – accommodation likely blocked – versus “The toddler knows that cold fusion works” – accommodation of the fact might occur locally within the attitude context). Particles like “too” exhibit complex projection: “Mary is having coffee too” presupposes someone else is having coffee, which projects unless the context provides an alternative focus (e.g., “Mary is having coffee too [as well as tea]”). This intricate trigger-specific landscape means that predicting whether and where accommodation might occur

requires sensitivity not just to content plausibility, but to the precise linguistic form used to introduce the presupposition.

Global, Intermediate, Local: Levels of Accommodation directly address the crucial question of *where* in the discourse structure the presupposed content is added when accommodation is necessary. The distinction, formally elaborated by Irene Heim and Hans Kamp within their dynamic frameworks, hinges on the **scope** of the linguistic operators embedding the trigger. **Global Accommodation** is the default and most common case. It involves adjusting the main, overarching common ground – the shared context assumed for the conversation as a whole. When someone walks into a room and says, “The presentation starts in five minutes,” listeners globally accommodate the existence of a specific presentation relevant to the current situation. The presupposed content becomes part of the foundational background for all subsequent utterances. **Local Accommodation** involves adding the presupposed content only within a specific, subordinate part of the discourse structure, typically within the scope of an operator like negation, a modal, or a quantifier. Consider the negated sentence, “John didn’t stop cheating on the test.” Globally accommodating “John cheated on the test” (adding it unconditionally to the CG) might imply the speaker accepts this as fact, which may not be intended. Local accommodation, inserting

1.6 Accommodation in Discourse Structure

The intricate constraints on accommodation and the nuanced variations across trigger types explored in Section 5 demonstrate the system’s remarkable sensitivity to linguistic form and contextual plausibility. However, the true power of presupposition accommodation is fully realized not merely within the confines of single sentences, but dynamically across extended stretches of discourse. Moving beyond isolated utterances, accommodation reveals itself as a fundamental architect of coherent conversation and narrative, enabling speakers to seamlessly manage topics, build intricate fictional worlds, and navigate inevitable communication breakdowns through cooperative repair.

Topic Management and Common Ground Expansion leverages accommodation as a primary engine for guiding the conversation’s focus and progressively enriching the shared information base without cumbersome explanation. Speakers strategically employ presupposition triggers to introduce new entities or background assumptions as if they were already established, relying on the listener’s willingness to accommodate. This creates a powerful illusion of continuity and shared history, allowing the discourse to advance efficiently. Consider the opening of a meeting: “Before we discuss the *Q3 budget report*, could someone *please send the minutes from last week’s session* to Sarah?” This single utterance presupposes the existence and relevance of a specific Q3 budget report (triggered by the definite description) and the existence of minutes from a specific previous session (also definite description), along with the fact that Sarah hasn’t received them yet (presupposed by the change-of-state verb “send”). None of this information may have been explicitly mentioned yet in the current conversation. Listeners accommodate these presuppositions, instantly updating their mental model of the meeting’s context to include these reports, sessions, and Sarah’s need, thereby establishing them as legitimate topics for immediate discussion. This technique allows speakers to leapfrog over tedious exposition. Herbert Clark and Catherine Haviland termed this the “Given-New

Contract,” where speakers implicitly agree to structure utterances so that given information (presupposed) links to the existing common ground, allowing new information (asserted) to be easily integrated. Accommodation is the mechanism fulfilling the listener’s side of this contract when the “given” isn’t actually given beforehand. Skilled narrators use this constantly: “The *detective* entered the *dimly lit room*, noticing immediately that *the priceless vase was missing*.” The definites (“the detective,” “the dimly lit room,” “the priceless vase”) presuppose specific, identifiable entities whose existence and relevance the listener readily accommodates, immediately populating the mental scene and focusing attention on the asserted disappearance. This strategic deployment transforms presupposition accommodation from a reactive repair mechanism into a proactive tool for structuring discourse and efficiently building complex shared contexts.

Narrative and Fictional Worlds represent perhaps the most profound demonstration of accommodation’s cooperative power, enabling the immersive construction of realities that exist solely within the shared imagination of teller and audience. Fiction inherently begins with a massive act of presupposition accommodation. The classic fairy tale opener, “Once upon a time, *in a faraway kingdom*, there lived *a beautiful princess*...” immediately triggers presuppositions about the existence of a specific distant kingdom and a specific princess. Listeners or readers do not balk at the lack of prior introduction; they globally accommodate these entities and the entire spatiotemporal framework into the nascent common ground of the story world. This foundational accommodation establishes the fictional common ground, a distinct context separate from real-world mutual knowledge, within which subsequent utterances are interpreted. J.R.R. Tolkien’s opening to *The Hobbit* masterfully utilizes this: “In *a hole in the ground* there lived *a hobbit*. Not *a nasty, dirty, wet hole*, filled with the ends of worms and an oozy smell, nor yet *a dry, bare, sandy hole* with nothing in it to sit down on or to eat: it was *a hobbit-hole*, and that means comfort.” The definites (“a hole,” “a hobbit,” “a nasty, dirty, wet hole,” etc.) presuppose the existence and identifiability of these entities *within the fictional context*. The reader accommodates not only the existence of a hobbit and its hole but also the category “hobbit-hole” with its defining characteristic of comfort, even though hobbits are entirely fictional. This process continues relentlessly throughout narratives. Presupposing intricate backstories (“*The ancient feud between the houses flared anew*”), character relationships (“She avoided *her stepfather’s gaze*”), or fictional technologies (“He engaged *the hyperdrive*”) relies entirely on the audience’s suspension of disbelief – a sustained, cooperative willingness to accommodate presuppositions into the fictional common ground. The listener or reader becomes an active co-constructor of the narrative world, continuously updating their mental model based on presupposed information treated as established fact within the story’s context. Failure to accommodate, demanding proof of the dragon’s existence or the kingdom’s location, shatters the narrative illusion. Accommodation is thus the essential pragmatic glue binding the audience to the fictional dream.

Repair and Negotiation acknowledges that despite the robust constraints of plausibility and informativeness, presupposition accommodation is not infallible. Speakers can misjudge the common ground, listeners can reject implausible presuppositions, or ambiguities can arise, leading to **accommodation failure**. When this occurs, the smooth flow of discourse is disrupted, triggering explicit **repair mechanisms** essential for restoring mutual understanding. The most direct response is a clarification request targeting the presupposed content itself: “Wait, *who* is John?” (challenging the presupposition of identifiable John triggered by “John’s car”); “What meeting? I didn’t know there *was* a meeting” (challenging the presupposition triggered by “the

meeting” or “cancel the meeting”); or “Stopped smoking? I didn’t realize he *ever* smoked!” (challenging the presupposition triggered by “stopped”). These moves explicitly reject the proposed accommodation and demand that the speaker provide the necessary background or rephrase. Such repairs highlight the constant negotiation inherent in managing the common ground. Accommodation is not unilateral; it requires listener consent, even if often tacit. Listeners can also **negotiate presuppositions** less confrontationally, perhaps by tentatively accommodating while seeking confirmation: “Okay... assuming there *is* a budget report... what exactly needs revising?” This reflects a provisional update, contingent on subsequent verification. Speakers themselves may initiate repair if they sense potential accommodation failure, backtracking to explicitly establish the presupposed information: “There’s this guy, John, from accounting... Anyway, *his* report has the figures we need.” This **bridging description** provides an explicit anchor for the subsequent definite reference (“his report”). The dynamics of repair and negotiation are particularly critical in high-stakes contexts like legal cross-examination. A lawyer asking, “When did you *stop* embezzling funds?” triggers the highly damaging presupposition that embezzlement occurred. A skilled witness must explicitly reject this presupposition (“Objection! Assumes facts not in evidence!” or “I never *started* embezzling funds”) rather than accommodating it by answering the “when” question, demonstrating how presupposition management transcends mere conversational smoothness to become a tool for argumentation and ethical communication. These repair sequences underscore that while accommodation is often silent and automatic, its potential failure reveals the underlying collaborative effort required to maintain a truly shared understanding, dynamically adjusting the common ground through

1.7 Experimental Approaches and Empirical Findings

The intricate dance of presupposition accommodation within discourse, where speakers strategically deploy triggers and listeners cooperatively update their shared understanding—sometimes seamlessly, sometimes through explicit negotiation—is not merely a theoretical construct. Its reality and mechanics are vividly illuminated through rigorous experimental investigation. Moving beyond philosophical arguments and formal models, psycholinguists and computational linguists have devised ingenious methods to probe how accommodation operates in real time within the human mind and manifests in natural language use. Section 7 delves into the empirical trenches, reviewing the key methodologies and landmark findings that have transformed our understanding of accommodation from an abstract conversational principle into a measurable cognitive process and observable linguistic phenomenon.

Behavioral Methods provide foundational insights by capturing listeners’ conscious judgments and interpretations, often revealing the constraints on accommodation identified theoretically. **Offline questionnaires** are a staple, presenting participants with sentences containing presupposition triggers in varied contexts and asking for acceptability judgments or paraphrases. These studies consistently confirm the critical role of plausibility. For instance, participants readily accept and accommodate “John stopped cheating” when context suggests academic misconduct is plausible, but reject it as infelicitous in a context praising John’s integrity, echoing von Stechow’s “Hey, wait a minute!” response. Such experiments also map the **trigger-specific landscape** outlined by Karttunen. Sentences with factive verbs (“Mary realized the concert was canceled”) are

judged highly acceptable even when the fact (the cancellation) is new, showing strong accommodation potential. In contrast, sentences with triggers embedded under strong “plugs” like “said” (“Bill said the concert was canceled”) are not interpreted as presupposing the cancellation occurred, demonstrating blocked projection and reduced accommodation pressure. **Sentence completion tasks** offer a more dynamic window. Participants might be given a sentence fragment designed to trigger a presupposition (e.g., “Even Bob...”) and asked to complete it. Responses reveal what information they naturally accommodate (e.g., “...agreed with the plan” presupposes others agreed, which participants accommodate). Emmanuel Chemla’s work using such tasks provided crucial evidence for variability in projection strength across triggers, showing that “stop” behaves differently than “continue” under certain embeddings. **Self-paced reading** and **reading time measures** move closer to online processing. Participants read sentences word-by-word, pressing a button to advance. Increased reading times at or immediately after the trigger signal processing difficulty. A classic finding is that sentences requiring accommodation (e.g., “The gardener watered the flowers” following no prior mention of flowers) elicit slower reading times compared to sentences where the presupposition is explicitly satisfied earlier (e.g., after “A gardener appeared. The gardener watered the flowers”). Crucially, this slowdown is amplified when the presupposed content is implausible (e.g., “The librarian shelved the thunderstorm”), demonstrating the cognitive cost of attempting to accommodate the impossible. Florian Schwarz’s experiments further showed this cost is modulated by contextual support; accommodation is smoother if the presupposed entity fits the scene (e.g., “the lock” in a hardware store description vs. a bakery).

Eye-Tracking and ERP Studies offer unparalleled, millisecond-resolution glimpses into the real-time cognitive processes underlying accommodation, far surpassing conscious judgments or reading times. The **Visual World Paradigm (VWP)** has been particularly revealing. Participants listen to spoken language while viewing a visual scene containing objects, and their eye movements are tracked. Upon hearing a presupposition trigger like a definite description (“Finally, put the apple on the towel”), listeners immediately (within 200-400 milliseconds) direct their gaze towards a potential referent matching the description (“an apple”), demonstrating the rapid activation of the presupposed entity search. The groundbreaking work by Joy Geng and Julie Sedivy, later refined by John Trueswell and colleagues, showed that if no suitable referent exists (e.g., only oranges are visible), listeners exhibit prolonged searching or look towards blank areas, reflecting the active attempt to accommodate a missing entity. When a plausible new referent is introduced visually moments before the trigger (e.g., an apple appears just as “the apple” is spoken), gaze shifts occur even faster, showing how visual context facilitates near-instantaneous accommodation. **Event-Related Potentials (ERPs)**, measuring electrical brain activity time-locked to specific words, provide complementary neural signatures. The **N400 component** (a negative deflection peaking around 400ms), sensitive to semantic integration difficulty, is reliably elicited when a presupposition is implausible or clashes with prior context. Hearing “Continue stirring the batter” after establishing no batter exists generates a larger N400 at “batter” compared to a context mentioning batter preparation. This reflects the brain’s difficulty integrating the presupposed entity into the current discourse model. The **P600 component** (a positive deflection peaking around 600ms), often linked to syntactic reanalysis or integration complexity, is frequently observed alongside or following the N400 in cases of presupposition failure, particularly when the utterance structure demands significant context repair or when local accommodation attempts clash with global knowledge.

Studies by Nicola Molinaro, Manuel Carreiras, and colleagues demonstrated distinct ERP profiles for different triggers: factives like “know” elicit robust N400 effects when their complement clause conflicts with world knowledge (“The pirate knows that the earth is flat”), while definite descriptions show stronger effects when uniqueness fails (“Pass *the* bowl” with multiple identical bowls present). Developmental ERP studies reveal that the adult-like N400 response to presupposition failure emerges gradually, mirroring children’s improving pragmatic skills discussed in Section 3.

Computational Modeling and Corpora shift the focus from individual cognition to patterns in language use and the challenge of replicating accommodation in artificial systems. **Corpus analysis** examines vast collections of real-world text and speech to identify how presuppositions are naturally triggered and resolved (accommodated or bound) by speakers. Analyzing parent-child interactions in the **CHILDES database** reveals how caregivers scaffold presupposition acquisition, often using exaggerated intonation on triggers or immediately confirming accommodated information. Studies of news text or fiction, like those by Bonnie Webber or Massimo Poesio, show a high frequency of “accommodatable” definites introducing new but inferrable entities (e.g., “The spokesman denied the allegations” presupposing identifiable allegations, readily accommodated from the discourse topic). These analyses confirm theoretical constraints: presupposed information introduced via accommodation is overwhelmingly plausible and informative within its context. **Computational modeling** tackles the formidable challenge of automating presupposition resolution, including accommodation, within Natural Language Processing (NLP) systems. Early **rule-based systems** implemented formal frameworks like DRT or Heim’s CCP directly. These systems used hand-crafted rules tied to trigger types (e.g., definite NPs trigger existential presuppositions) and checked constraints like plausibility against knowledge bases (e.g., WordNet, ConceptNet). For instance, resolving “John stopped smoking” involved checking if “John smoked” was present in the discourse context (binding); if not, and if “John is a person” and “people can smoke” were plausible, the system accommodated “John smoked” into the context. While illustrative, such systems were brittle, struggling with novel contexts and the subtleties of real-world plausibility. **Statistical and machine learning models** marked a significant advance. Treating accommodation as a classification task (e.g., “Does this trigger require global accommodation, local accommodation, binding, or rejection?”), models leverage contextual features from large text corpora. The rise of **contextual embeddings** from models like BERT and GPT revolutionized this. These models, pre-trained on massive text datasets, generate dense vector representations capturing word meaning and context. Researchers like Nanjiang Jiang and Wei Lu have shown that fine

1.8 Accommodation in Natural Language Processing

The rich tapestry of experimental findings and corpus analyses explored in Section 7 vividly demonstrates the cognitive reality and intricate patterns of presupposition accommodation in human language processing. However, replicating this nuanced, context-dependent, and often near-instantaneous human ability poses a formidable frontier for artificial intelligence. For Natural Language Processing (NLP), the field dedicated to enabling machines to understand, interpret, and generate human language, modeling presupposition accommodation is not merely an academic curiosity; it is a fundamental requirement for achieving robust,

natural, and contextually aware interaction. Section 8 examines the critical role of accommodation in NLP, the historical and contemporary approaches to tackling its challenges, and the promising yet complex path forward.

The Core Challenge for NLP stems directly from the very nature of presupposition itself. NLP systems – whether dialogue agents, machine translation engines, summarization tools, or question-answering systems – must operate within a dynamic context mirroring the human common ground. Failure to correctly identify and handle presuppositions leads to brittle, nonsensical, or even harmful outputs. Consider a simple dialogue system interaction: *User*: “Cancel the meeting with Dr. Smith.” *System (without accommodation)*: “Error: No meeting identified.” A human listener would effortlessly accommodate the presupposition that a specific meeting with Dr. Smith exists and is salient. The system’s failure stems from its inability to update its internal representation of the common ground based on the presupposition triggered by the definite description “the meeting” and the implicit uniqueness implied by “with Dr. Smith.” Similarly, in machine translation, translating the Japanese sentence “*Buchou wa kaigi ga chuushi ni natta to itta*” (Buchou wa kaigi ga chuushi ni natta to itta – “The department head said the meeting was canceled”) requires recognizing that the topic particle “wa” triggers a presupposition that the department head is already under discussion, while the subject particle “ga” introduces “kaigi” (meeting) as new information. Mistranslating the presuppositional structure can distort the information flow. In summarization, failing to accommodate presupposed background information from the source text can result in summaries that are incoherent or omit crucial implicit links. Question answering systems stumble if they cannot distinguish between asserted and presupposed information when evaluating answers. For instance, correctly answering “When did Mary stop smoking?” requires understanding that “stop smoking” presupposes Mary smoked in the past; an answer giving a date is only valid if this presupposition holds. Without robust accommodation mechanisms, NLP systems fundamentally misunderstand the pragmatic fabric of language, remaining trapped in a literal, context-poor interpretation that drastically limits their utility and naturalness.

Rule-Based and Heuristic Approaches constituted the earliest attempts to computationally grapple with presupposition and accommodation, drawing inspiration directly from the formal semantic frameworks discussed in Section 4. Systems implemented core ideas from Discourse Representation Theory (DRT) or Heim’s Context Change Potentials (CCP). The process typically involved: 1. **Trigger Identification**: Parsing the input text to identify presupposition triggers (definite descriptions, factive verbs, iteratives, clefts, etc.) based on predefined lexical and syntactic rules. 2. **Projection Calculation**: Using rules derived from Karttunen’s “holes, plugs, filters” classification to determine the scope and projection behavior of the trigger within the sentence structure (e.g., handling negation or embedding under attitude verbs). 3. **Antecedent Search**: Attempting to bind the presupposed content to an existing discourse referent within the current DRS or knowledge base. 4. **Accommodation Decision & Placement**: If binding failed, applying constraints (plausibility, informativeness, non-contradiction) using heuristic rules and available world knowledge (often drawn from resources like WordNet or hand-crafted domain-specific ontologies). Based on these checks, the system would decide whether to accommodate and, if so, whether to perform global, intermediate, or local accommodation within the DRS structure. Early systems, such as those built within the LKB (Linguistic Knowledge Building) environment or specific dialogue systems projects like the TRAINS/TRIPS system,

demonstrated the feasibility of this approach for constrained domains. For example, in a meeting scheduling domain, encountering “Reschedule the meeting” would trigger a search for a unique, salient meeting in the context; failing that, and if deemed plausible (e.g., meetings are common entities in the domain), the system might accommodate the existence of a specific meeting, perhaps flagging it for user confirmation. However, these approaches faced significant limitations. Hand-crafting rules for all potential triggers and complex projection scenarios was labor-intensive and inevitably incomplete. Crucially, assessing **plausibility** and **informativeness** proved immensely difficult. Heuristics were crude, and domain-specific knowledge bases lacked the breadth and nuance of human world knowledge, making systems brittle outside their narrow scope. The infamous “John stopped the machine” example could fail if “John” wasn’t previously established as an operator or if “the machine” wasn’t uniquely identifiable, even if perfectly sensible to a human in context. Furthermore, these systems struggled with the dynamic, cumulative nature of the common ground, often resetting context too readily.

Statistical and Machine Learning Models emerged as a powerful alternative, leveraging patterns learned from large corpora rather than relying solely on hand-crafted rules. The core paradigm shifted to treating presupposition resolution (including the decision to accommodate) as a **classification** or **ranking** problem. Features extracted from the local linguistic context (words surrounding the trigger, syntactic structure, discourse history) and sometimes external knowledge sources were used to predict: * Whether a presupposition trigger required resolution (vs. being bound). * If resolution is needed, whether accommodation is plausible/ permissible. * The potential antecedent for binding (if applicable). * The likely level (global, local) or content of accommodation. Early statistical models used features like lexical cues, distance to potential antecedents, and simple semantic similarity measures. The revolution came with the advent of **contextual word embeddings** and deep learning architectures like BERT, GPT, and their successors. These models, pre-trained on vast amounts of text, develop rich representations of words and sentences that implicitly capture contextual nuances, world knowledge, and pragmatic tendencies, including presuppositional behavior. Researchers like Nanjiang Jiang and Wei Lu demonstrated that fine-tuning models like BERT on datasets annotated for presupposition projection and accommodation (e.g., the COPA dataset for factives or custom datasets for definites) yields significant improvements over rule-based and older statistical methods. The model learns, from countless examples, that “continue” in “continue the discussion” typically presupposes an ongoing discussion in the context, while “the solution” in a math paper likely refers to a unique solution derived earlier. These models show an impressive ability to handle many routine cases of accommodation implicitly through

1.9 Cross-Linguistic and Cross-Cultural Perspectives

The intricate challenges faced by NLP systems in replicating human-like presupposition accommodation, particularly their struggle with the subtle interplay of context, world knowledge, and pragmatic constraints, underscore a fundamental truth: accommodation is not merely a universal cognitive mechanism operating identically across all languages and cultures. While the core pragmatic principles outlined by Stalnaker and Lewis – the common ground and cooperative adjustment – provide a robust theoretical foundation, the *im-*

plementation of presupposition and the *propensity* for accommodation exhibit fascinating variations shaped by linguistic structure and cultural norms. Section 9 ventures beyond the often Indo-European-centric focus of much presupposition theory to explore this rich tapestry of diversity, examining how different languages encode presuppositional triggers, how cultural contexts influence the willingness to accommodate, and the significant challenges this poses for translation and intercultural understanding.

9.1 Linguistic Diversity in Presupposition Triggers reveals that the inventory of devices languages use to signal presupposed information extends far beyond the familiar triggers of English. Languages lacking definite articles, such as Mandarin Chinese or Russian, must rely on alternative strategies to convey definiteness and trigger the corresponding existence and uniqueness presuppositions. Mandarin, for instance, often leverages word order, context, and demonstratives. While a bare noun like “shu” (书 - book) can be indefinite or definite depending on context, the use of a demonstrative like “nà běn shū” (那本书 - that book) strongly presupposes the existence and identifiability of a specific book for the listener, relying heavily on discourse context and shared situational knowledge for accommodation to succeed. Russian similarly uses word order (typically, known information comes first), demonstratives (“tot” - that), and case marking to signal definiteness. An utterance like “Ja vstretil **starogo druga**” (Я встретил старого друга - I met the old friend) with the adjective in the accusative case form typically used for definite objects presupposes a specific, identifiable old friend exists, prompting accommodation if not already established. Conversely, Japanese presents a complex system of particles with deep presuppositional implications. The topic particle “wa” (は) marks known or presupposed information, contrasting sharply with the subject particle “ga” (が), which often introduces new or focal information. Saying “Zō **wa** hana ga nagai” (ゾウは鼻が長い - Elephants, their noses are long) presupposes that elephants are the topic under discussion, while “Zō **ga** kita” (ゾウが来た - An elephant came) introduces the elephant as new information. Accommodation is crucial for interpreting “wa” phrases correctly; the listener must accept the presupposed topic status. Furthermore, languages possess unique triggers absent in English. Some languages, like West Greenlandic (Kalaallisut), have specific evidential markers indicating the source of information (e.g., direct observation, hearsay, inference), which can carry presuppositions about the speaker’s epistemic state or the nature of the evidence. Certain Native American languages, like Central Alaskan Yup’ik, possess “mirative” markers signaling unexpected or surprising information, which can presuppose the speaker’s prior contrary expectation. The Korean particle “nun” (은/는), while sometimes compared to Japanese “wa,” carries its own nuances of contrast or frame-setting, often presupposing a specific context against which the assertion is set. These diverse linguistic strategies demonstrate that the *form* of presupposition triggering varies significantly, demanding that accommodation mechanisms be sensitive to language-specific grammatical cues rather than merely translating trigger categories from English.

9.2 Cultural Influences on Accommodation Propensity delves into the crucial question of whether cultural background shapes the *willingness* or *manner* in which listeners accommodate presuppositions. Research suggests that cultural norms governing communication style and cooperation significantly impact accommodation dynamics. A key dimension is the distinction between **high-context** and **low-context** cultures, as proposed by Edward T. Hall. In high-context cultures (e.g., Japan, China, many Arab and Latin American societies), communication relies heavily on shared background knowledge, implicit understanding, and the

context itself. Here, there may be a greater inherent expectation and propensity to accommodate presuppositions, as speakers frequently rely on listeners to fill in the gaps based on shared context and relational understanding. Challenging a presupposition might be seen as unnecessarily confrontational or indicating a lack of shared understanding. Studies, such as those comparing Japanese and American participants, suggest a tendency for Japanese listeners to accommodate presupposed information more readily, especially when it relates to social hierarchy or group norms implicitly understood within the culture. For instance, an utterance presupposing a superior's opinion ("As the manager said, we should...") might be accommodated more automatically in a Japanese context, reflecting cultural deference. Conversely, low-context cultures (e.g., United States, Germany, Switzerland, Scandinavia) emphasize explicit, direct verbal communication. Listeners in these cultures might exhibit a slightly lower threshold for challenging presuppositions they perceive as unfounded or insufficiently supported, prioritizing clarity and explicit grounding over assumed shared knowledge. This aligns with broader cultural dimensions like **individualism vs. collectivism** (Hofstede). Collectivist cultures, emphasizing group harmony and interdependence, might foster a greater cooperative inclination towards accommodation to maintain conversational flow and avoid disruption. Individualistic cultures, prioritizing personal clarity and autonomy, might see more frequent explicit negotiation or rejection of presuppositions perceived as imposing unwarranted assumptions. Experimental work by Tanya Matsui and colleagues, using scenarios testing the accommodation of presuppositions under varying plausibility, found subtle but significant cross-cultural differences in acceptance rates and the types of clarification requests elicited. For example, presuppositions subtly reinforcing culturally specific background knowledge (e.g., about family structures or social obligations) were accommodated more smoothly within the relevant cultural group. An utterance like "We should all go together, *as is our custom*," presupposing a specific custom, might be readily accommodated within a tightly-knit community where such customs are deeply ingrained but challenged or misunderstood by an outsider unfamiliar with the cultural context. These findings underscore that accommodation, while a universal pragmatic tool, is deployed within culturally shaped frameworks of cooperativeness, directness, and shared knowledge expectations.

9.3 Translation and Intercultural Communication Challenges arising from linguistic and cultural differences in presupposition are profound and often underestimated. Translators face the constant dilemma of whether to preserve the presuppositional structure of the source language, potentially risking accommodation failure in the target audience, or to make presupposed information explicit, potentially altering the discourse structure and stylistic flow. A classic example involves translating English definite articles into languages without them. Translating "The solution is simple" into Russian requires choosing a structure (e.g., using a demonstrative "Это решение" - Это решение, This solution) that signals definiteness strongly enough for Russian listeners to accommodate the presupposition of an identifiable solution, or risk the utterance sounding like it introduces a new, undefined solution. Misjudging this can lead to confusion. Similarly, translating Japanese "wa" phrases requires careful consideration of how to convey the topic-presupposing function in languages lacking an exact equivalent, often resorting to stress, word order, or explicit phrasing. Cultural presuppositions pose even greater hurdles. An advertisement slogan like "Experience the tradition" presupposes a specific, valued tradition known to the target culture. Translating this for an audience lacking that cultural background may require explicating the tradition ("Experience our centuries-old brewing

tradition”), fundamentally changing the pragmatic impact by removing the subtle presupposition requiring accommodation. Legal and political discourse is particularly fraught. A question like “Have you stopped the illegal activities?” presupposes the activities occurred. Translating this directly into another language preserves the damaging presupposition, but if the cultural context views such direct accusatory presuppositions as highly confrontational or inadmissible without evidence

1.10 Controversies and Theoretical Debates

The intricate challenges of managing presuppositional mismatches in translation and intercultural communication, as explored in Section 9, underscore a fundamental reality: despite decades of research and sophisticated formal modeling, the theoretical bedrock of presupposition accommodation remains contested ground. While the core mechanism—adjusting the common ground to satisfy a speaker’s presupposed requirement—enjoys broad acceptance, profound disagreements persist regarding its *nature*, its *origins*, and its *boundaries*. Section 10 delves into these vibrant controversies, examining the enduring debates that continue to shape our understanding of this essential pragmatic phenomenon.

10.1 Accommodation as Semantic vs. Pragmatic represents the deepest philosophical fissure, revisiting foundational questions about where meaning ends and use begins. On one side stand theorists who view accommodation as fundamentally **semantic**, governed by rules intrinsic to linguistic expressions themselves. Proponents of **satisfaction theories**, such as those formalized by Hans Kamp in DRT or Irene Heim in File Change Semantics, argue that presuppositions are conventional, lexically or grammatically encoded properties of triggers. Accommodation, in this view, is a repair mechanism *licensed* by the semantic system when the conventional requirement isn’t met in the input context. It’s an integral part of the compositional meaning process, triggered automatically by the semantics when the definedness condition fails. The semantic rules dictate *what* needs to be satisfied for an utterance to be interpretable; accommodation is the pragmatic *how* for achieving that satisfaction when possible. This perspective finds support in the remarkable consistency of projection behavior across diverse contexts for core triggers. The fact that “stop” invariably presupposes prior activity, regardless of conversational context, suggests a semantic bedrock. Herzberger (1973) and later Soames (1989) argued that presupposition failure creates a semantic undefinedness (a truth-value gap or undefined context update), and accommodation is the pragmatic process of *avoiding* this semantic crash by context adjustment. The distinction lies in whether the *requirement* is semantic (part of the expression’s conventional meaning) and the *resolution mechanism* is pragmatic.

Conversely, a robust pragmatic camp, championed by Robert Stalnaker and David Lewis, insists accommodation is purely **pragmatic**, rooted solely in principles of rational cooperative interaction. In this view, presuppositions themselves are pragmatic phenomena: they are propositions the speaker *takes* to be common ground for the utterance to be appropriate. Accommodation is simply the listener’s cooperative response to this speaker act. There is no semantic undefinedness forcing the issue; rather, the listener chooses to adjust the common ground to make sense of the speaker’s contribution, guided by the maxims of conversation (Grice) and the goal of maintaining dialogue coherence. The pragmatic view emphasizes the flexibility and defeasibility of accommodation. The same trigger (“the king”) can sometimes be accommodated and

sometimes rejected based entirely on extra-linguistic factors like world knowledge or conversational goals, suggesting the constraint isn't rigidly semantic. François Recanati (2004) pushes this further, arguing that what gets accommodated is often not the literal semantic content of the trigger but a pragmatically enriched proposition tailored to the specific context. For instance, accommodating "John's children" in "John's children are quiet" might involve not just the minimal existence presupposition but also the assumption that John *has* children *here and now*, relevant to the situation. This contextual flexibility seems difficult to capture within purely semantic encoding. The debate remains vibrant, with ongoing attempts at synthesis. Some, like Mandy Simons (2003, 2006), propose hybrid models where certain aspects of presupposition are semantic (the trigger's conventional effect) but their resolution (binding vs. accommodation) and constraints (plausibility) are pragmatic. Others explore whether presupposition triggers function as conventional indicators of speakers' intentions about common ground management.

10.2 The Triggering Problem Revisited confronts the persistent question: *why* do certain linguistic expressions carry presuppositions? While Karttunen's classic list (factives, iteratives, definites, clefts, etc.) is widely accepted, the theoretical basis for *what makes an expression a trigger* remains elusive. Is it an arbitrary lexical property, a consequence of grammatical structure, or something else entirely? The **lexicalist view** holds that presuppositional behavior is an inherent, often idiosyncratic, feature of specific words or morphemes. The verb "regret" simply comes with a presupposition that its complement is true; this is part of its lexical entry, learned by speakers. Similarly, the word "again" carries the iterative presupposition as part of its core meaning. This view explains the stability of triggering for core items but struggles with borderline cases and the emergence of new triggers. For example, why do verbs like "manage" ("John managed to open the door") often imply difficulty, potentially presupposing prior attempts, while semantically similar verbs like "succeed" ("John succeeded in opening the door") typically presuppose the action itself? Are these differences purely lexical accidents?

The **construction-based view**, gaining traction in cognitive linguistics and construction grammar (e.g., Adele Goldberg, Charles Fillmore), argues that presuppositions arise from the meaning of larger grammatical patterns or constructions, not just individual words. Cleft sentences ("It was John who left") are a prime example. The presupposition (someone left) seems inherent to the cleft structure itself, not solely to the words within it. Similarly, the existential presupposition triggered by definite descriptions ("the cat") might be tied to the grammatical role of definiteness marking within a noun phrase construction. This perspective better handles patterns where presupposition emerges from syntactic configuration. Aspectual verbs ("start," "stop," "continue," "finish") present a fascinating challenge. While clearly presuppositional, the *exact* nature of the presupposition depends on the aspectual structure of the verb phrase. "John started running" presupposes John wasn't running before; "John started to run" might more strongly presuppose an intention or plan to run. Work by Angelika Kratzer and Irene Heim explored how the presuppositions of aspectual verbs interact with the event semantics of their complements, suggesting a compositional process rather than purely lexical triggering. The question extends to projection: why are "holes" like factives so resilient, while "plugs" like "say" block projection? Is this also lexically specified, or does it follow from the semantic contribution of the embedding predicate (e.g., factives entail their complements, while verbs of saying do not)? Abusch (2010) and others have sought deeper semantic explanations for projection classes, linking them to

concepts like veridicality or the scope-taking properties of operators. The triggering problem thus remains a central puzzle, demanding explanations that bridge the gap between lexical idiosyncrasy and compositional semantics.

10.3 Accommodation and the Limits of Cooperativity probes the darker side of this seemingly benign cooperative mechanism. David Lewis’s original formulation framed accommodation as a *ceteris paribus* rule operating within the bounds of the Cooperative Principle. But what happens when speakers exploit this mechanism, pushing presuppositions that are controversial, manipulative, or downright false? Can accommodation be **forced**, and what are the ethical implications? This debate critically examines the boundaries of pragmatic cooperation. The classic example is the loaded question: “Have you stopped embezzling funds?” This utterance presupposes the addressee *was* embezzling funds. Under strict

1.11 Social, Rhetorical, and Forensic Applications

The theoretical debates surrounding the nature and limits of presupposition accommodation, particularly the potential for its exploitation in adversarial contexts, transition naturally into an examination of its profound real-world consequences. Far from being confined to abstract linguistic models or laboratory experiments, the mechanisms of presupposition triggering and accommodation permeate the fabric of social interaction, wielding significant power in persuasion, shaping legal outcomes, and fueling creative expression. Understanding these applications reveals accommodation not merely as a cognitive convenience, but as a fundamental force influencing public discourse, justice, and cultural production.

11.1 Persuasion, Politics, and Media leverages presupposition accommodation as a masterful, often invisible, tool for framing debates and embedding assumptions directly into the audience’s accepted common ground. Skilled rhetoricians and political operatives understand that presuppositions, being backgrounded and resilient to negation, bypass critical scrutiny more effectively than direct assertions. The infamous loaded question, “When did you *stop* beating your wife?”, exemplifies this power. Regardless of the answer given – “Last year,” “I never did,” or even silence – the presupposition (that the addressee *did* beat his wife) is communicated and, crucially, often accommodated by listeners as a taken-for-granted premise simply by virtue of its presentation. This technique, known as **presupposition smuggling**, is ubiquitous in political rhetoric and media framing. Consider political slogans: “Make America Great *Again*” presupposes a past state of greatness that has been lost, framing the present as deficient. Similarly, debates about “tax relief” presuppose taxes are an affliction requiring alleviation, while discussions of “defending *our* borders” presuppose ownership and a threat needing repulsion. These presupposed frames shape perception before the substantive argument even begins. Media reporting frequently utilizes definite descriptions to presuppose contested facts as established: “The *economic crisis* worsened today...” presupposes the existence and nature of the crisis itself. Repetition across media outlets reinforces these presuppositions, increasing their plausibility and making accommodation more likely. Over time, presupposition accommodation contributes significantly to the formation of **echo chambers**. When media sources consistently presuppose a shared worldview or set of “facts” (e.g., “*The corrupt elite* manipulate the system”), audiences within that sphere repeatedly accommodate these assumptions, solidifying them as foundational elements of their conversational common

ground, making alternative perspectives increasingly difficult to integrate without significant cognitive dissonance or explicit challenge. Advertising similarly exploits accommodation: “Now get *even longer-lasting* freshness!” presupposes the product already provided freshness, and “Discover *the solution* to wrinkles” presupposes both the existence of a specific solution and the problem of wrinkles as salient concerns. By bypassing direct claims, these presuppositions slip past analytical defenses, shaping consumer beliefs and desires through silent updates to their mental common ground.

11.2 Legal Discourse and Cross-Examination represents a domain where the stakes of presupposition accommodation are exceptionally high, directly influencing testimonial credibility, jury perception, and legal outcomes. Lawyers are acutely aware that questions are not neutral; their structure can embed damaging presuppositions that witnesses, under pressure, may inadvertently accommodate through their answers. Cross-examination is a particularly fertile ground for this strategy. A prosecutor asking, “What did you do with *the murder weapon* after the shooting?” presupposes not only the existence of a murder weapon but also that the defendant used it and that a shooting occurred. A flustered witness answering “I hid it” accommodates all three presuppositions. Even a denial like “I didn’t touch any weapon!” still leaves the presuppositions about the weapon and the shooting intact and potentially accommodated by the jury. This technique, sometimes called “putting words in the witness’s mouth,” relies on the witness failing to explicitly reject the presupposition before answering the question. Skilled defense attorneys train witnesses to challenge presuppositions directly: “Objection! Assumes facts not in evidence – there *was* no murder weapon identified,” or “I never saw any murder weapon, and I dispute that any shooting occurred as described.” Beyond witness testimony, presuppositions permeate legal language. Jury instructions must be meticulously crafted to avoid embedding presuppositions that could bias deliberations. An instruction stating, “You must consider *the defendant’s prior history* in assessing credibility,” presupposes such a history exists, potentially prejudicing the jury even if the history is irrelevant or inadmissible. Drafters must instead use conditional structures or explicit phrasing: “*If* you find the defendant has a prior history relevant to credibility, you *may* consider it...” Contract law also hinges on precise presupposition management. A clause stating, “The penalty for *late delivery* shall be...” presupposes late delivery is a defined concept within the contract. If the definition is ambiguous or absent, disputes arise over what exactly is being presupposed and accommodated. Forensic linguists are frequently called upon to analyze recorded confessions, threats, or ransom notes, scrutinizing presuppositional structures. A statement like “I’ll return *the child* when I get *the money*” presupposes the speaker has the child and is demanding money, crucial evidence for intent and knowledge. Similarly, analyzing whether a defendant presupposed knowledge they later denied (“Why did you hide *the gun*?”) can be pivotal. The precise identification and potential accommodation of these presuppositions by investigators, judges, and juries underscore how legal realities are often constructed through the pragmatic fabric of language.

11.3 Humor and Creative Language finds in presupposition accommodation a rich source of incongruity and surprise, the bedrock of much comedic and artistic effect. Humor frequently arises from **presupposition failure** or the deliberate manipulation of accommodation expectations. Absurdist comedy thrives on triggering presuppositions that are impossible to accommodate realistically. The classic joke, “A man walks into a bar with a slab of asphalt under his arm and says, ‘A beer please, and one for *the road*!’”, works because the definite description “the road” triggers a presupposition of existence and relevance. The punchline forces the

listener to attempt accommodation, linking “the road” literally to the asphalt slab, creating a nonsensical yet momentarily plausible connection that violates expectations. Puns often exploit ambiguity in presupposition triggers. Groucho Marx’s line, “One morning I shot an elephant *in my pajamas*. How he got *in my pajamas*, I’ll never know,” initially leads the listener to accommodate the presupposition triggered by the locative phrase “in my pajamas” as modifying the shooting event. The second sentence forces a reanalysis, revealing the phrase ambiguously modifies the elephant, creating a logically absurd but humorous accommodated scenario. Narrative humor uses presupposition to set up unexpected twists. Saki’s short stories often begin with seemingly innocuous definite descriptions presupposing bizarre realities that the narrative gradually reveals, forcing the reader to retrospectively accommodate the oddity. Beyond humor, creative writers and poets strategically use presupposition triggers to establish setting, character, and backstory with remarkable economy. The opening line of Gabriel García Márquez’s *One Hundred Years of Solitude*, “Many years later, as he faced *the firing squad*, Colonel Aureliano Buendía was to

1.12 Frontiers and Future Research Directions

The exploration of presupposition accommodation, traversing its intricate cognitive underpinnings, formal representations, diverse linguistic manifestations, contentious theoretical debates, and potent societal applications, reveals a phenomenon of astonishing depth and pervasive influence. Far from being a settled chapter in linguistic pragmatics, the field vibrates with unresolved questions and burgeoning avenues for discovery. Section 12 charts these frontiers, outlining the most promising trajectories for future research, poised to deepen our understanding of this cornerstone of human communication and extend its implications across disciplines.

Bridging Formal Models and Cognitive Realities remains a paramount challenge. While dynamic semantic frameworks like Discourse Representation Theory (DRT) and Context Change Potentials (CCP) provide elegant formalizations of accommodation as context update, and psycholinguistic experiments reveal its rapid, constraint-sensitive online processing, a significant gap persists. Future research demands models that are not merely *compatible* with processing data but are explicitly *processing-oriented* and *cognitively plausible*. How can the abstract mechanisms of DRS construction or CCP application be mapped onto the neural substrates and temporal dynamics observed in ERP or eye-tracking studies? For instance, the distinction between global and local accommodation, formally clear in DRT, needs corresponding cognitive signatures. Does local accommodation, involving insertion within a subordinate DRS (e.g., under negation), elicit distinct neural activity (perhaps involving increased P600 amplitude reflecting structural complexity) compared to the smoother integration of globally accommodated content (reflected in attenuated N400)? Computational cognitive models, such as those within the ACT-R or Bayesian frameworks, offer fertile ground. Researchers like Adrian Brasoveanu and Jakub Dotlačil are pioneering approaches integrating probabilistic reasoning about common ground with incremental semantic composition, aiming to predict reading times and interpretation preferences based on formal semantic constraints. Furthermore, exploring the neural correlates of constraint application is crucial. Which brain networks evaluate presupposed content for plausibility against world knowledge (likely involving prefrontal cortex and semantic hubs) or detect potential

contradictions preventing accommodation (perhaps involving anterior cingulate cortex conflict monitoring)? Bridging this gap promises not only more psychologically grounded linguistic theory but also insights into the fundamental architecture of meaning construction in the brain.

Multimodality and Embodied Interaction represents a crucial expansion beyond the traditional focus on spoken or written language. Human communication is inherently multimodal, integrating gesture, gaze, facial expression, posture, and prosody, all potentially modulating presupposition triggering and accommodation. Future research must investigate how these channels interact. A pointing gesture accompanying a definite description (“Pass me *that* book”) can instantly anchor the referent in the physical environment, making accommodation of existence and uniqueness effortless and perhaps bypassing cognitive costs associated with purely linguistic definites. Conversely, a confused facial expression or averted gaze might signal accommodation failure, prompting clarification before an explicit “Hey, wait a minute!” is uttered. Prosody also plays a vital role; contrastive stress on “the” in “*THE* solution” might signal a stronger uniqueness presupposition or indicate that accommodation is essential, while a hesitant intonation might soften a presupposition, making rejection less likely. The burgeoning field of human-robot interaction (HRI) provides a unique testing ground. Can robots leverage embodied cues (directing gaze, subtle gestures) to facilitate accommodation of their presuppositions by human users? Reciprocally, how should robots process human multimodal input to detect presuppositions and decide when to accommodate? For example, a service robot hearing “Put it back where you found it” needs to interpret the gesture accompanying “it” and accommodate the presupposed location based on its own prior actions and shared visual context. Research by researchers like David DeVault and Alexander Koller focuses on building computational models of common ground that integrate visual perception and action history to support robust presupposition handling in embodied agents. Understanding accommodation in this richer, situated context is essential for developing truly natural human-machine communication and for a complete picture of how humans manage shared understanding in the physical world.

Advanced Computational Modeling faces the relentless challenge of scaling presupposition accommodation to the complexities of open-domain dialogue and real-world text. While Large Language Models (LLMs) like GPT-4 exhibit surprising surface-level competence in handling many presuppositional phenomena – often generating coherent continuations that imply successful accommodation – their underlying mechanisms and reliability remain opaque and fragile. A critical frontier is rigorous **evaluation of LLM presuppositional competence**. Benchmarks like the recently proposed “PRESUPP” dataset systematically test models on projection, accommodation decisions under varying plausibility, and resistance to adversarial presupposition smuggling. Initial findings, such as those by Mario Giulianelli and colleagues, suggest LLMs are susceptible to accommodating implausible information presented presuppositionally, highlighting a lack of robust grounding in world knowledge or common-sense reasoning. Future NLP research must focus on **integrating neural approaches with explicit reasoning and dynamic common ground management**. Hybrid architectures are emerging, combining the contextual power of LLMs with symbolic reasoners that maintain an explicit, updatable representation of the discourse context and mutual beliefs, akin to a computational DRS or common ground stack. Incorporating large-scale, structured **commonsense knowledge graphs** (e.g., ATOMIC, ConceptNet) and efficient reasoning mechanisms is vital for plausibility checking

during potential accommodation. Furthermore, research into **accommodation-aware dialogue systems** is intensifying. Systems need to not only *understand* and *accommodate* user presuppositions but also strategically *generate* utterances with presuppositions that guide the conversation efficiently, knowing when the system can rely on user accommodation and when explicit assertion is necessary. This involves modeling the system’s *own* assumptions about the user’s knowledge state and dynamically updating it based on interaction – a complex recursive problem central to achieving truly cooperative artificial agents.

Broader Philosophical and Interdisciplinary Connections beckon, revealing accommodation as a linchpin connecting linguistic pragmatics to fundamental questions about mind, society, and knowledge. **Epistemology** grapples with belief revision: how rational agents update their beliefs upon receiving new information. Accommodation presents a unique, rapid, and often implicit form of belief adoption distinct from classical belief update based on evidence or argument. When does accommodating a speaker’s presupposition constitute justified belief formation, versus merely a pragmatic acceptance for conversational purposes? This links to debates on testimony and the ethics of belief. **Social ontology** explores how collective intentionality – shared beliefs, goals, and statuses – is constructed and maintained. Accommodation is a primary micro-mechanism for building and reinforcing the common ground, the shared reality upon which social institutions depend. John Searle’s concept of “status functions” (e.g., “This piece of paper *is* money”) relies crucially on collective acceptance, a process often initiated through presupposition and accommodation (“Pass *the chairman* the gavel”). **Theory of Mind (ToM)**, the ability to attribute mental states to others, is deeply intertwined with accommodation. Successfully accommodating a speaker’s presupposition requires inferring what they believe is mutually known. Impairments in ToM, as seen in Autism Spectrum Disorder, correlate with difficulties in presupposition management, suggesting shared cognitive foundations. Developmental studies tracing how children’s growing ToM capacity enables increasingly sophisticated accommodation offer rich insights into both domains. Finally, **language evolution** models must account for presupposition and accommodation. Did these mechanisms co-evolve with