Evidentials, utterance modifiers, and certain discourse particles often appear in interrogatives, but, when they do, they are *forward looking*: their semantic contribution is not (primarily) to the question, but rather to the range of felicitous replies. We use these data to illuminate (i) the complex relationship between markers of evidence-source and epistemic states, (ii) the nature of pragmatic intrusion, and (iii) the proper formalization of pragmatic pressures. Our proposal makes sense of the mixed intuitions about whether evidential sentences in declaratives are genuine assertions.

    Evidentials appear canonically in declaratives, but they are often possible in interrogatives, where they place conditions on the evidence source of a felicitous reply, as in (1) (see also Faller 2002:§6.3.2).[1]

(1)   bkra.shis za.khang-la phyin-song-ngas   (Tibetan; Garrett 2001)
        Tashi   restuarant go-DIR.PAST-Q-EVIDENTIAL
        'Did Tashi go to the restaurant?'

        "presupposes that the hearer has direct evidence that Tashi has either gone or not gone to the restaurant, and expects Tashi to answer on such an evidential basis" (Garrett 2001:229)

    Discourse particles like German *wohl* (Zimmermann 2004) are similarly freed from their containing utterances. When they appear in interrogatives, they relax the quality-standards normally in place for replies:

(2)   Wen hat Hania wohl eingeladen?   (Hania hat wohl ihre Chefin eingeladen
        Who has Hania PART invited   cf. Hania hat PART your Boss invited.
        ≈ 'Who would you say Hania invited?'   (≈ 'I'd guess Hania invited your boss.'   )

    Utterance modifiers like *honestly* work in the reverse direction from *wohl*: when they have interrogative complements they tighten the standards for felicitous replies.

(3)   Seriously/Honestly, is Sam a werewolf?   (cf. Seriously/Honestly, Sam is a werewolf.)

These cases are united by the following characteristics, the basis of our formal pragmatics for them:

(4)   Let $Q[\mathsf{e}]$ be an interrogative containing one of the above items.
      a.   Uttering $Q[\mathsf{e}]$ is in part the act of asking Q.
      b.   The precise contribution of e is notoriously hard to specify (ineffability; Potts 2006), but
      c.   uttering $Q[\mathsf{e}]$ affects the range of felicitous replies along the pragmatic dimensions highlighted in Grice's quality maxim (5).

(5)   **Quality** "Contribute only what you know to be true. Do not say false things. Do not say things for which you lack evidence." (Grice 1975)

    Our analysis accounts for the cluster of properties in (4). It also yields an explanation for why there are conflicting reports about the degree to which the relevant analogue of (4a) holds for declaratives. We achieve these results by defining these morphemes so that they affect the fine-grained nature of the context and in turn have the potential to affect the felicity of utterances that follow them:

(6) $c + [\![\varphi[\mathsf{e}]]\!] = c' + [\![\varphi]\!]$, where c' is just like c except that it reflects the contribution of e. (That contribution is the focus of the paper, and the next page.)

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[1]There appear to be some languages in which an evidential in an interrogative serves to mark the speaker's evidence source for the presuppositions of that question. We do not analyze such readings in this talk.

We achieve a uniform update function for φ using Groenendijk's (1999) *game of interrogation*. Our focus is the change from c to c', which determines the felicity of φ. This paves the way to capturing the subtle presuppositional effects identified by Faller (2002) and Garrett (2001). It also makes good on the intuition that these items blur the distinction between semantic and pragmatic content (Bach and Harnish 1979:220). To make precise the shift from c to c' in (6), we adopt a version of Potts's (2006) pragmatic theory, in which Grice's maxims exist as independently adjustable pressures on the space of utterances. We develop a fuller, more faithful treatment of (5), by taking into account its emphasis on evidence sources as well as epistemic status — exactly the factors in play in (1)–(3).

The theory is built upon *quality thresholds*, which are simply numbers in the interval $[0, 1]$. Every context c specifies a quality threshold $c_\tau \in [0, 1]$. We gauge whether a given utterance is above or below that threshold by taking the following *maximum entropy* perspective on propositions:

(7)   The probability distribution[2] P mimics the proposition q iff $P(\{w\}) = 0$ if $w \notin q$ and $P(\{w\}) = P(\{w'\})$ for all $w, w' \in q$.   (Merin 1997)

This provides the basis for the following restriction on felicitous utterances:

(8)   A speaker S can felicitously use a declarative φ in context c only if $P_S(\llbracket \varphi \rrbracket) > c_\tau$. ($P_S$ is a probability distribution representing the epistemic state of S.)

The threshold c_τ is set differently for different contexts. We propose that certain adverbials and discourse particles change it, moving it up or down, according to their lexical specifications:

(9) $c + \llbracket \mathbf{honestly}(\varphi) \rrbracket = c' + \llbracket \varphi \rrbracket$, where c' is just like c except $c_\tau < c'_\tau$ (10) $c + \llbracket \mathbf{wohl}(\varphi) \rrbracket = c' + \llbracket \varphi \rrbracket$, where c' is just like c except $c_\tau > c'_\tau$

If φ is an interrogative, then any reply is judged according to the new standard set by c'. What was once felicitous might no longer be, and conversely.

Evidentials also temporarily change the quality threshold, but they do so in a way that is directly tied to evidence sources. An evidential-marked declarative of the form $\varphi[\mathbf{ev}]$ commits the speaker to the existence of a situation in which he received evidence for φ of the type specified by $\mathbf{ev}$ (hearsay, direct, etc.). For interrogatives, this commitment is realized as part of the answerhood conditions. The nature of this commitment is important, but it is not our main concern. We focus instead on the change to the quality threshold. It too is determined largely by the evidential's type. Consider a situaton s in which someone receives hearsay evidence for a proposition p. The conditional probability, given the common ground, that s is a situation in which p is true might be quite low. In contrast, a situation in which someone receives direct (e.g., visual) evidence for p is almost always a situation in which p is true. The probability is much higher. We propose that these probabilities are the quality thresholds determined by the evidential morpheme.[3] Thus, to assert $\varphi[\mathbf{ev}]$ is to assert φ, but that assertion is made in a temporary context in which the standard for assertion (the threshold) is potentially lax. Thus, we capture the mixed intuitions about whether evidential sentences are truly asserted.

We close by stepping back. In the present theory, semantics and pragmatics are kept distinct, but they are intertwined: lexical items can affect the context, which in turn affects the pragmatic evaualtion of later utterances. We thus regard this work as of a piece with the work of Levinson (2000) and Chierchia (2004, 2006) on pragmatic intrusion, but our overall conception is quite different.

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[2] A probability distribution is a function from propositions (subsets of countable W) into $[0, 1]$ obeying the restrictions that $P(W) = 1$ and $P(p \cup q) = P(p) + P(q)$ for disjoint p and q.

[3] For each evidential $\mathbf{ev}$, we might identify these probabilities with the average conditional probability (over all propositions p), given the common ground, that a situation of receiving $\mathbf{ev}$-type evidence for p is a situation in which p is true.