Minimally coded attention to SP/W–AD/R dyad	Maximally coded attention to SP/W–AD/R dyad
Objectivity	(Inter)subjectivity
Q-heuristic	R- and M-heuristics

Figure 1.1. Correlations between degree of subjectivity and heuristics.

skirmishing," subjective opinions which in fact are best expressed by e.g. *I think*, are concealed behind objective-seeming expressions like *surely*.[21]

From the perspective of an information-based, truth-conditional approach to semantics, or an approach assuming one-form:one-meaning, one might ask how it is possible for one lexeme with multiple polysemies to be explicit. The puzzle diminishes, however, when attention is paid to the fact that explicitness is a matter of context, for an individual polysemy does not occur in a vacuum. Polysemies often have different distributional properties, and an explicit use will take advantage of them. One of the striking phenomena that we will come back to again and again in this book is the extent to which language use is redundant. Explicitness is achieved through the choice of Ls in specific syntactic strings, and in specific linguistic (and nonlinguistic) contexts.

In sum, in our view, (relative) objectivity vs. (inter)subjectivity is not only a matter of cognitive stance but a property of language that arises directly out of the SP/W–AD/R dyad and the rhetorical uses to which they put language in communication. SP/W rhetorical purposes motivate uses of the heuristics discussed in 1.2.3. Objectivity is associated with the Q-heuristic, (inter)subjectivity with the R- and M-heuristics. This can be modeled as in figure 1.1. Like the heuristics, objectivity and (inter)subjectivity are both context-dependent and context-creating.

This is a synchronic model. We will see that, from a historical perspective, subjectification precedes intersubjectification.

1.3 Semantic change

In the following chapters we will develop the widely recognized hypothesis that the chief driving force in processes of regular semantic change is pragmatic: the context-dependency of abstract structural meaning allows for change in the situations of use, most particularly the speaker's role in strategizing this dynamic use. As pointed out by Bartsch: "semantic change is possible because the specific linguistic norms, including semantic norms, are hypothetical norms, subordinated to the highest norms of communication (the pragmatic aspect of change)"

[21] Halliday terms this "metaphorical representation" of modality.

(1984: 393). We consider the implicatures/inferences in question to be both cognitive (information-related) and communicative/rhetorical (arising out of purposeful negotiation between speaker and addressee). Although we do not use the cybernetic feedback model developed by Lewandowska-Tomaszczyk (1985), we agree wholeheartedly with her claim that meanings have "a starting point in the conventional *given*, but in the course of ongoing interaction meaning is negotiated, i.e. jointly and collaboratively constructed . . . This is the setting of semantic variability and change" (Lewandowska-Tomaszczyk 1985: 300).

Semantic change is typically thought of in terms of three research questions (see Geeraerts 1997):

(i) Given the form–meaning pair L (lexeme) what changes did meaning M of L undergo?
(ii) Given a conceptual structure C, or meaning M, what lexemes can it be expressed by?
(iii) Given C, what paths of semantic change can be found to or from other Cs?

Work on Question (i) is known as semasiology. In the semasiological approach, form (morphosyntactic and morphophonological properties) is typically kept constant (though it can be subject to phonological changes). The focus is on the development of polysemies (or, where relevant, splits into homonymies), e.g. *as long as* "equal in length" > "equal in time" > "provided that"; *even* "evenly" > "unexpected member of set of alternatives" (the focus particle use as in *Even Samantha has left*); or *sanction* "approve, authorize" > "impose penalty"). This can be schematically represented as in (13), where "Form" is a cover term for syntax and phonology:

(13) $$L \rightarrow \begin{bmatrix} \text{Form} \\ \\ M_1 \end{bmatrix} > L \rightarrow \begin{bmatrix} \text{Form} \\ \\ M_1 + M_2 \end{bmatrix}$$

Semasiology is the approach that will be the prime focus of the present book, but always within the context of the other two questions.

Work on Question (ii) is known as onomasiology. The focus is on the development or restructuring of coded representations of a particular domain such as COLOR, INTELLECT, or CONDITIONAL. For example, in OE CONDITIONAL was expressed by Ls such as *gif* "if"; *butan* "unless," *nymþe* "unless." In PDE it is represented by *if*, *when*, *as long as*, *suppose*, *provided that*, *unless*, etc. Changes in representation of C between time 1 (t_1) and time 2 (t_2) can be schematically represented as:

(14)
$$\begin{array}{ccc} C & & C \\ \updownarrow & & \updownarrow \\ (L_1, L_2)\, t_1 & > & (L_1, L_2, L_3)\, t_2 \end{array}$$

The schema in (14) highlights recruitment of new lexemes to represent C; there are therefore more Ls at t_2 than at t_1. Of course, L_1 or L_2 may eventually be lost, in which case there may be fewer or the same number of Ls at t_n. A major example of the onomasiological approach to semantic change is provided by Buck's (1949) dictionary of Indo-European synonyms, which organizes the material according to such conceptual categories as "mankind: sex, age, family relationship, parts of the body, food and drink, clothing, motion, possession, quantity and number, time, sense perception, emotion, mind, thought, religion."

Answers to Questions (i) and (ii) inform work on Question (iii), which concerns detectable regularities of change across abstract conceptual structures, as evidenced by particular semasiological changes. Here the focus is on the growing evidence for unidirectional relationships in semantic structure such as TEMPORAL > CONDITIONAL (but not vice versa), TEMPORAL > CONCESSIVE (but not vice versa), DEONTIC > EPISTEMIC (but not vice versa), and at a more global level from content meanings based in event-structure to procedural meanings based in discourse. The resulting synchronic implicational relationship is of the type "if a term is concessive it may have derived from a temporal" (e.g. *while*, *however* [note the *ever* here]), or, in a stronger version, "if L has temporal and concessive polysemies, then the concessive is with strong probability derived from the temporal" (see 2.2.3). This can be represented as in (15):[22]

(15) $C_2 \supset C_1$

A word of caution is always necessary when speaking of change in language, or a component of language such as semantics. Despite terms like "language change" or locutions like TEMPORAL > CONDITIONAL, or *must* "be obligated to" > "I conclude that," it is important to recall that natural language does not exist without language-users. The abstract systems that language-users draw on when they do things with language largely[23] differ from speaker to speaker because of the discontinuity of persons and of acquisition. One abstract subsystem may be expanded by links to others, and may eventually be replaced – here as always, the phenomenon of coexistent variation schematized in (10) in 1.2.2 is at work: new

[22] Note the implicational $\supset$ is meant to be understood only in the non-deterministic, violable sense "if B then probably A."

[23] "Largely" because there are presumably some aspects of language structure that are universal, such as the existence of Ns and Vs and of hierarchic syntactic structure. We regard most aspects of language structure as language-specific, however.

structures coexist with older ones, and old ones need not disappear. Most especially, one set of links between form and meaning may be expanded by additional links, with old links only occasionally disappearing. Aggregates of differences among systems give us the impression over time of continuous change, but this continuity is only apparent. Therefore, strictly speaking, we should not say that root modals "become" epistemic, or that the individual lexeme *must* "becomes" epistemic *must*; rather we should say that over time speakers come to use *must* to express epistemic as well as root modal concepts. We will, however, use the usual shorthand expressions of "become" and "change" as a convenience.

1.3.1 Mechanisms of semantic change: metaphorization, metonymization

Two major mechanisms of change are usually recognized in morphosyntactic and phonological change: reanalysis and analogy.[24] A third mechanism, borrowing, will not be discussed. For most of this century, reanalysis has been considered the major factor in morphosyntactic change (Meillet 1958 [1912], Langacker 1977, Lightfoot 1979, 1991, Harris and Campbell 1995; but see Tabor 1994a, Haspelmath 1998). Meillet regarded it as the only locus of innovative grammatical change ("grammaticalization"); Lightfoot (1979) conceptualized it as the only locus of "catastrophic" syntactic change, i.e. change that can have potentially radical consequences for a linguistic system (his paradigm example is the development of syntactic auxiliaries in English). Nevertheless, understanding of the extremely local nature of reanalysis has grown, and analogy/extension have been recognized as holding promise for interesting generalizations. Accordingly, there has been increasing interest in the role of analogy (e.g. Kiparsky 1992, Vincent 1994) and in the question of whether a fundamental distinction can actually be made between analogy and reanalysis (e.g. Tabor 1994a).

Likewise in semantic change, two mechanisms are usually recognized, metaphor and metonymy. For example, Nerlich and Clarke have argued that "[t]he trick of being innovative and at the same time understandable is to use words in a novel way the meaning of which is self-evident" (a semasiological claim) and that in essence "there are only two main ways of going about that: using words for the near neighbours of the things you mean (metonymy) or using words for the look-alikes (resemblars) of what you mean (metaphor)" (Nerlich and Clarke 1992: 137). To avoid confusion between the synchronic, static view of these two terms and the view of their processual function as mechanisms, we will refer to them in their dynamic dimension as metaphorization and metonymization. As in the case of

[24] Analogy is reconceptualized and redefined as "extension" by Harris and Campbell (1995). Theirs is a study of syntactic change, and the differences in focus will not concern us here.

analogy and reanalysis, the relative importance of these mechanisms has been differently construed over time. For most of the twentieth century metaphor(ization) was considered the major factor in semantic change. Metaphorization is primarily an analogical principle, and involves conceptualizing one element of a conceptual structure C_a in terms of an element of another conceptual structure C_b. Since it operates "*between* domains" (Sweetser 1990: 19; italics original), processes said to be motivated by metaphorization are conceptualized primarily in terms of comparison and of "sources" and "targets" in different (and discontinuous) conceptual domains, though constrained by paradigmatic relationships of sames and differences. Thus it is possible to conceptualize the development of temporal *while* "during the time that" > concessive *while* "although," or *grasp* "seize" > "understand" in terms of a projection or leap across domains. One question, however, is what is meant by "domain" (for an insightful critique, see Croft 1993, Barcelona 2000a, Kövecses 2000). The term is used in a variety of senses. For example, in Sweetser's book, as in this one, semantics, syntax, phonology are considered large-scale domains of linguistic organization and of study; so are large-scale categories like modality, performativity; likewise so are the domains that "model our understanding of the social and physical world," of the "world of reasoning," and of the act of describing the world ("speech acting") (Sweetser 1990: 21). But the term is also often used for irreducible "primitive representational field[s]" (Langacker 1987/91: chapter 4) like space, time, deontic modality, epistemic modality, concession. If irreducible primitives of this type are called "domains," as they often are in work on metaphor, e.g. Lakoff (1987), Heine, Claudi, and Hünnemeyer (1991), then the question of how large a leap has to be to count as a metaphor becomes a major issue. We will be using the term "conceptual structures" for such large-scale domains in an attempt not to prejudge what is in "different domains" (allowing for metaphorization) or the "same domain" (allowing for metonymy).

By contrast, metonym(ization) has until recently usually been considered the poor relation of metaphor(ization). Traditional examples tend to be limited to phenomena such as contiguity or association of an overtly accessible sort, e.g. part–whole, cause–effect (Gibbs 1993), often in physical space, e.g. *cheek* "jaw bone" > "fleshy part above jaw-bone"; part for whole, e.g. *keel* for *ship* (part–whole synecdoche); and ellipsis, e.g. *a Hockney*, for *a painting by Hockney*, Fr. *Place de Grève* "square where strikers met" > *grève* "strike." On the basis of such examples, Ullmann said that metonymy is "less interesting than metaphor since it does not discover new relations but arises between words already related to each other" (Ullmann 1964: 218). Nevertheless, he recognized metonymy as "an important factor in semantic change" (loc. cit.).

But metonym(ization) should also be understood as a conceptual phenomenon (see e.g. Hopper and Traugott 1993: 80–81). Given this perspective, the

fundamental importance of metonymy has recently come to be appreciated (see e.g. Barcelona 2000a), and hypothesized to be "probably even more basic to language and cognition" than metaphor (Barcelona 2000b: 4). Stern had already seen this in the early part of the twentieth century when he wrote of "permutation" and "adequation" (both kinds of metonymy; see 2.2.2) as involving "the subjective apprehension of the referent" (Stern 1968 [1931]: 350). For example, he wrote of the association of mental state with its object or cause, e.g. *concern* (n.) "interest (in some matter)" > "(the) matter that concerns" (ibid. p. 376). And focusing on the "syntactical" nature of linguistic metonymization, Kurylowicz regarded it as "the fundamental and overall phenomenon" (1975: 92). Construed as a conceptual mechanism by which invited inferences in the associative, continuous stream of speech/writing come to be semanticized over time, metonymization provides as rich an explanation as metaphorization for semantic change, and in many cases a richer one (Traugott 1988, Traugott and König 1991). Consider the relationship of part to whole. In semantic change, it has often been noted that a term for a part will become a term for a whole, but not vice versa, e.g. FINGERNAIL > FINGER > HAND in Australian aboriginal languages. This can be seen as enabled by the unidirectionality of entailments in part–whole relationships: "'part', by definition, entails some idea of 'whole', but a 'whole' entails no notion of 'part'" (Wilkins 1996: 275–282). Not only strong entailments, but also weaker, defeasible implicatures can enable change. The motivation is the R-heuristic "Say no more than you must, and mean more thereby." Or consider concessive *while*; this can be seen to arise out of association of surprise (special, marked effect) at the explicit marking of two events as taking place at the same time (the motivation is not only the R-Heuristic but also the M-heuristic: "complex expression warns 'marked' situation").

Neither conceptual metaphorization nor conceptual metonymization in principle excludes the other: easily comprehended metaphors are consistent with typical associations; both exploit pragmatic meaning; both enrich meaning. Indeed, we agree with the claim that the target and/or the source of a potential metaphor "must be *understood* or *perspectivized* metonymically for the metaphor to be possible" (Barcelona 2000b: 31; italics original). Since the prime focus of this book in regard to processes of change is on IITSC and invited inferences, it is also on the mechanism of conceptual and discursive metonymization and its role in semantic change. Invited inferencing arises out of implicatures that are regularly associated with linguistic material in syntagmatic space, together with the operation of the R- and M-heuristics on underspecified linguistic material that give saliency to specific aspects of reasoning and rhetorical strategizing in particular contexts. Metaphorization is regarded as not only a constraint on but also often the outcome of metonymic change.

We take the position that the notion of conceptual metonymy needs to be expanded to account for subjectification and intersubjectification. Both are ultimately

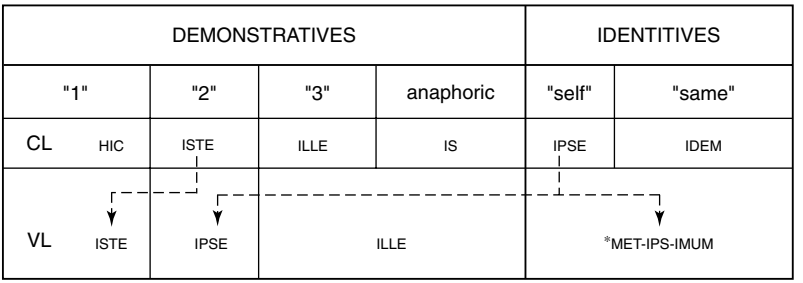

Figure 1.2. Shift in demonstratives from Classical to Vulgar Latin (Harris 1978: 69).

dependent on the SP/W – AD/R dyad, and by hypothesis derive from the mechanism of metonymic inferencing combined with rhetorical strategizing in the context of the speech event.

As we saw in 1.2.4, subjectivity is ubiquitous in language synchronically. Subjectification is the semasiological process whereby SP/Ws come over time to develop meanings for Ls that encode or externalize their perspectives and attitudes as constrained by the communicative world of the speech event, rather than by the so-called "real-world" characteristics of the event or situation referred to.[25] Subjectification is very wide-spread, indeed the most pervasive type of semantic change identified to date. Although there is brief mention of it in Bréal (1964 [1900]), subjectification is a relatively new concept in studies of semantic change (see e.g. Traugott 1982,[26] 1989, 1995a, Langacker 1990, and papers in Stein and Wright 1995).

A striking example of subjectification is the shift in demonstrative pronouns that occurred in Vulgar Latin. In Classical Latin, there was a set of demonstratives: *hic* "this near me; close to first person," *iste* "that near you; close to second person," *ille* "that of some other person; close to third person." There was also a set of identitives: *ipse* "self," *idem* "same." In Vulgar Latin forms in this system shifted in the direction of the speaker's deixis; the result was that first person demonstrative was now expressed by *iste* (formerly the second person demonstrative), the second person demonstrative by *ipse* (formerly the identitive "self"), and "self" by **met-ips-imum*, the "self" identity marker *ipse* reinforced by *met* (emphasizing identity, cf. "personally") and *-imum* (the superlative). Harris (1978: 69) represents the shift as in figure 1.2.

[25] Contrast Langacker (1990, 1999), who identifies subjectification with attenuation of the subject; cf. comments on his views on subjectivity in 1.2.4 above.

[26] The term "subjectification" is not used in Traugott (1982), but the "expressive" tendency of semantic change identified there is roughly equivalent to subjectification as defined here.

Other examples of subjectification include the development of discourse marker uses of adverbs such as *after all*, performative uses of locutionary verbs such as *promise*, *recognize* (ultimately derived from spatial and mental terms respectively), and a variety of other developments of progressively less truth-conditional and less-referential meanings that have been called cases of "pragmaticalization" (Aijmer 1996) and, in the case of the development of conversational routines, "discursization" (Arnovick 1994). Subjectification draws on cognitive principles but takes place in the context of communication and rhetorical strategizing. It falls directly out of SP/W–AD/R interactions, and the competing motivations of speakers to be informative and of addressees to construe invited inferences. In particular, it is the metonymically based process by which SP/Ws recruit meanings that function to convey information to do the work of communication: to express and to regulate beliefs, attitudes, etc. It therefore inevitably involves intersubjectivity to some degree.

In instances where meanings come explicitly to index and acknowledge SP/W's attitude toward AD/R in the here and now of the speech event, intersubjectification can be said to take place, for example, when non-honorifics are recruited to serve honorific uses. Intersubjectification, therefore, is a change which results in the development of meanings that explicitly reveal recipient design: the designing of utterances for an intended audience (Clark and Carlson 1982) at the discourse level. Note there cannot be intersubjectification without some degree of subjectification because it is SP/W who designs the utterance and who recruits the meaning for social deictic purposes. It is part of the same metonymically based mechanism of recruiting meanings to express and regulate beliefs, attitudes, etc. as subjectification, and can be regarded as a special subtype of the latter.

There has been a tendency, especially in pedagogical circles, to associate explicitness with objectivity. One of the key points in any kind of writing instruction is the importance of being able to make reference clear (e.g. "You (writer) may have the reference clear in your head, but the reader may not be able to access it"). Instruction to be explicit includes providing unique referents, restricting indeterminacies of lexical meaning, and restricting connotative meaning, especially negative ones such as tend to be found in "four-letter" words and swear words, slang, etc. Such instruction is usually accompanied by exhortations to be scientifically objective. It is therefore not surprising that the suggestion has been made that subjectification defined as preemption of old meanings to encode and externalize speaker subjectivity is really objectification (e.g. Diewald 1993, Keller 1995). However, if, as suggested in 1.2.3, objectivity has to do primarily with literal and truth-conditional meaning, and (inter)subjectivity with procedural meanings that make features of the discourse situation manifest, then subjectification and intersubjectification are clearly distinct from objectification.

Subjectification and intersubjectification are typical of "internal" change in the sense that they are natural changes. By contrast objectification is sporadic and largely irregular since it is the highly conscious and deliberately interventive sort of change that comes about when ordinary words are preempted for specific purposes; in other words, it is an "external" kind of change. Therefore, although it is a mechanism of change, it is considered a minor one from the perspective of this book, much as borrowing is. An extreme example of "objectification" is when lawyers seek to constrain interpretations of words. Another is the development of "technical jargon," which involves the stipulative definition of terms by professionals, who seek to construct meanings in ways as immune as possible to personal interpretation. So, for example, when terms like "competence," "performance," "common ground," "subjectivity," or "objectivity" are redefined for purposes of linguistic discourse, objectification occurs. Even though the definitions are the products of individuals and therefore reflect the beliefs of those who construct the definition, the purpose of the definition is to establish a shared, public meaning that can be replicated and used in analytic discourse (scientists often avoid the problem by inventing new words made up of fragments of Latin or Greek), not to make explicit the SP/W's attitude to what is being said. Sometimes the practice of redefinition or of coining new terms is accompanied by a certain amount of linguistic play which may give it the appearance of being less objective, but nevertheless a definite technical meaning is the aim, at least when the term is first used, e.g. "virtual reality," MOOs, MUDDs, etc. All these are cases of "external," "non-natural" change, not of "internal," "natural" change, which is the central concern of historical linguistics.

Since words are used by people in contexts, redefinitions of the kind mentioned above are of course subject to change and may readily undergo de-objectification as the words spread to the market-place of non-technical discourse. For example, current use of *paradigm* in general contexts to mean "major (epochal) new model or approach" (e.g. calling the availability of shopping on the internet *a paradigm shift in shopping*) reflects popularization of a technical use from Kuhn (1996 [1962]); see also *schizophrenia* (Nunberg 1979). Although the public may think that the purpose of a dictionary is or should be to "fix the language" ("objectivize" it), dictionaries can do no such thing, as has been recognized at least from Dr. Johnson's time on. They reflect the language of the time (sometimes with its history, see especially the OED) and the biases of the compilers. They include not only denotations but also connotations, in other words the subjectifications that have come to be fairly widespread. Good dictionaries also include extensive material on the contextualization of language.

As characterized here, subjectification (and intersubjectification) results in semasiological phenomena, i.e. it brings about meaning changes in specific lexical items and constructions. The claim that meaning change is subject to a very powerful

and wide-spread tendency on SP/Ws' parts to employ the metonymically based mechanism of subjectification is a claim about the probable history of particular lexemes and constructions. It in no way denies or contradicts the fact that certain large-scale social factors may serve as counterforces. The development of literacy and especially of grammars and dictionaries without question has an objectifying effect on language and language practices. The stylistic choices SP/Ws make either personally or collectively at certain points in history are highly subject to cultural attitude changes; at one point in history an "objective" style may be more highly valued, at another a less objective one, e.g. in the seventeenth century scientific writing underwent a radical shift to a style that demoted the agent of research (and hence interpretation) in favor of "objectivity" as associated with nominalization, passive constructions, and a minimally subjective lexicon (Halliday 1990 (cited in Olson 1994), Thomas and Turner 1994).[27] In a very interesting article Adamson (1995) has discussed the rise of Free Indirect Style. This is the style that represents a consciousness filtered through the perspective of the narrator; its prototype involves third person, past tense, but proximal deictics *now* and *here*, as well as idiomatic speech and exclamations, and modals which report the character's rather than the narrator's conjecture (Banfield 1973, Fludernik 1993), as in:

(16) The sound of wheels while Mrs. Glegg was speaking was an interruption highly welcome to Mrs. Tuliver, who hastened out to receive sister Pullet – *it must be sister Pullet, because the sound was that of a four-wheel*.
(1860 Eliot I, vi [Fludernik 1993: 188])

Here the whole section in italics represents what Mrs. Tuliver, not the reporting narrator, concluded. Free Indirect Style in English is often associated with the development of subjectivity in the late nineteenth century novel, climaxing in Virginia Woolf's writing. But Adamson argues that it originated in *I-was-now* representations of experiential memory as developed in Puritan literature such as Bunyan's. Here interest in the individual self, and in memory of the past "self" as "unregenerate, and of value solely for its exemplification of what it is like to be in a state of sin" became paramount (Adamson 1995: 208). Adamson suggests that the later shift to third person in Free Indirect Style was a case of objectification and a counterexample to Traugott's hypothesis of subjectification. However, this is in an area of style and large-scale preferences for certain modes of representation, not of Ls and their development. Like changes in social practices concerning politeness, such style shifts are outside the purview of IITSC.

[27] Note that objectivity in this sense is not identical with our definition of it in 1.2.4; in scientific writing demotion of the agent (the investigator and author) is favored, whereas in our view of objectivity maximally objective language gives overt expression to all participant roles in an event structure.

Likewise, when massive borrowings or word coinages occur, especially borrowings designed to serve the needs of a vernacular language newly validated for use as the vehicle of law or education, of a new technology, or, in the case of medieval feudalism, a new sociopolitical organization, such borrowings and coinages are likely to be used at first in their most objective meaning (Marchello-Nizia Forthcoming). Over time, however, such new coinages are, we predict, likely to undergo subjectification (possibly including intersubjectification).

1.3.2 The Invited Inferencing Theory of Semantic Change model of semantic change

To summarize discussion so far, we assume that at a particular moment in time t_1 the meaning M of a lexeme L is linked to a conceptual structure C. This relationship can be expressed as (ignoring morphosyntactic and phonological Form):

(17) $\begin{array}{l} L \rightarrow M \\ \quad\; \updownarrow \\ \quad\; C \end{array}$

At t_1 SP/W, whether child or adult, has acquired a grammar (i.e. a linguistic system) and pragmatic heuristics such as the R-, M-, and Q-heuristics. SP/W and AD/R have available to them both as individuals and as members of the community metaphors, metonymies, and (inter)subjectivities; these provide cognitive constraints on the innovation and therefore actuation of new meanings. They are what Nerlich and Clarke have called "the micro-dynamics of semantic innovation, that is the synchronic process of the actual speech activity, which give rise to constant variation . . . strategies and procedures of semantic innovation, related to communicative–expressive need" (Nerlich and Clarke 1992: 127). In the on-line production of language SP/Ws use mechanisms such as metaphorization, metonymization (including invited inferencing, subjectification, intersubjectification), and objectification in the context of spoken and written discourses.

SP/W may innovate a metaphoric use of a lexeme in an utterance-token. Creative writers in particular do this. The new use is an instantaneous development for SP/W; it may or may not be gradual for that individual across the speech style and genres he or she uses. Often such uses do not spread to other speakers, but sometimes they do. In such cases the spread across the community may be gradual, but for each individual acquiring the new meaning the change is instantaneous. Most readers will probably recognize their own experiences along these lines with the (metaphorical and playful) innovation "the millennium-bug," coined to refer to the anticipated problem that some computers might not have been able to handle

the date change to the year 2000. Alternatively, SP/W may begin ad hoc to exploit a conversational implicature (IIN) that already exists and may even use it innovatively in a new linguistic environment. Such uses may be considered personal features of style and are unlikely to survive and play any part in a particular change unless they come to be endowed with symbolic value. If they do acquire social value and therefore become salient in a community they are likely to spread to other linguistic contexts and to other SP/Ws, in other words, they become GIINs with strengthened pragmatic impact. They are considered GIINs so long as the original coded meaning is dominant or at least equally accessible, but when that original meaning becomes merely a trace in certain contexts, or disappears, then the GIIN can be considered to have become semanticized as a new polysemy or coded meaning: a "macro-dynamic" change (Nerlich and Clarke 1992) has occurred.[28] Again, semanticization of a new polysemy is instantaneous for the individual, but may spread slowly to other speakers.

Different pragmatic meanings can become salient in different communities. Such differences may depend on the context in which the new meanings are primarily exploited. For example, Jurafsky (1996) notes that FEMALE may lead in some cases to augmentative semantics, sometimes diminutive. He shows that these apparently contradictory developments can be quite naturally accounted for in terms of different conceptual structures. MOTHER, when associated with origins and contrasted with CHILD, may lead to "large, important." But WOMAN, perceived as smaller and less powerful than MAN, may lead to "small, unimportant." Note here both the linguistic context (opposition sets) and the social, evaluative contexts are different in each case.

The prime objective of IITSC is to account for the conventionalizing of pragmatic meanings and their reanalysis as semantic meanings. Differently put, historically there is a path from coded meanings to utterance-token meanings (IINs) to utterance-type, pragmatically polysemous meanings (GIINs) to new semantically polysemous (coded) meanings. This is a view of change foreshadowed by some brief and often hesitant statements made in the early 1970s such as "it is probably a fact that, in the course of time, inferences do become references" (Bolinger 1971: 522; see also Geis and Zwicky 1971, Grice 1989 [1975], Levinson 1979; for more details see 2.3.2). But none of the authors involved did a detailed historical study to provide empirical evidence for the hypothesis. As has been widely discussed, change does not originate within language (grammars do not change by themselves), but in language use, i.e.

[28] The distinction between individual "micro-dynamic" and communal "macro-dynamic" change is similar to that between "innovation" (which occurs in the individual and may not spread to others) and "change," which involves spread across speakers, communities, and registers (Weinreich, Labov, and Herzog 1968, Milroy 1993).

in factors external to language structure. It is not possible to predict precisely under what circumstances and when a change will take place in historical linguistics (Lass 1980, 1997). But nevertheless there are very strong tendencies that are replicated at the macro-level from language to language and period to period, which suggests certain commonalities of production and perception. Once actuated or initiated, they spread through a community, again in replicable ways, that ultimately lead to cumulative effects and adoption by a community.[29]

As a concrete example, consider the development of *as/so long as* in English. In OE and ME the spatial meaning as in (18) already coexisted with the temporal "for the same length of time as" in (19) (presumably derived in earlier Germanic from the spatial meaning).

(18) þa het Ælfred cyng timbran lang scipu ongen ðа
then ordered Alfred king build-INF long ships against those
æscas; þa wæron fulneah tu *swa lange swa* þa oðru.
warships they were nearly twice as long as the others
"then King Alfred ordered long ships to be built to battle the warships; they were almost twice as long as the other ships."

(850–950 ChronA, p. 90)

(19) wring þurh linenne clað on þæt eage *swa lange swa*
wring through linen cloth on that eye as long as
him ðearf sy.
him need be-SUBJUNCT
"squeeze (the medication) through a linen cloth onto the eye as long as he needs."

(850–950 Lacnunga, p. 100)

In (19) temporal coextension of administering the medicine with need for the medicine invites the inference of conditional "provided that." This is because the main clause is imperative, part of a set of procedures to be followed in imaginary situations; in such imaginary situations, the need is construed as contingent and temporary (signaled by the subjunctive). There is even an IIN of "conditional perfection" (the "if and only if" relationship, cf. Geis and Zwicky 1971, van der Auwera 1997), which derives from the projected temporariness of the need together

[29] Keller (1994) borrows the "invisible hand" metaphor from the eighteenth century philosopher of economics, Adam Smith, to account for the cumulative consequences at the macro-level of individual acts on the micro-level, particularly those performed without human design. A much-cited example is that of a path that gets cut across grass, the result of people making short-cuts to save time, not with the intention of making a path. On our view, such cumulative acts at the micro-level of language use may or may not be intentional. They include the exploitation by SP/Ws of invited inferences and the interpretation of them as salient by AD/Rs; they also include SP/Ws' preemption of meaning to their own perspective (subjectification).

with the generic distributive aspect ("on all occasions that"). Texts in OE and ME exemplify the use of *as/so long as* primarily with verbs of existence (*be*), living and other event structures that are construed as temporary. Here the conditional reading is available if the temporal clause refers to the future, or is generic, but never seems particularly salient. All examples allow a reading of the type "for the length of time that . . . /until X no longer Y," e.g. for (19) "squeeze the medication on the eye for the length of time that he needs it/until he no longer needs it."

In Early Modern English (EMdE), however, examples begin to occur in which the conditional IIN has been generalized to contexts in which the conditional is more salient, i.e. the temporal meaning, though present, is not predominant. The contexts have been extended to event structures involving patterns of reasoning and cognition that are unlikely to change. However, the context suggests that a change is not only possible but would be highly valued, as in:

(20) They whose words doe most shew forth their wise vnderstanding, and whose lips doe vtter the purest knowledge, so *as long as* they vnderstand and speake as men, are they not faine sundry waies to excuse themselues?
(1614 Hooker, p. 5)

At this stage we can say the conditional reading has become a GIIN of temporal *as*/*so long as*. But the temporal is still available ((20) could mean "for the length of time that they understand and speak as men," i.e. "as long as they live").

By the mid-nineteenth century we find examples where the conditional appears to be the only possible meaning. The GIIN has been semanticized as a conditional polysemy of temporal *as/so long as*:

(21) a. "Would you tell me, please, which way I ought to go from here?"
"That depends a good deal on where you want to get to," said the Cat.
"I don't much care where – " said Alice.
"Then it doesn't matter which way you go," said the Cat.
" – *so long as* I get *somewhere*," Alice added as an explanation.
(1865 Carroll, chapter 6, p. 51)

b. Galligan told the jury that it is proper for police to question a juvenile without a parent present *as long as* they made a "reasonable effort" to notify the parent.
(1990 Aug. 9, United Press Intl.)

Particularly interesting is the fact that there appear to be no examples in which an *as/so long as* clause in Eng. has been saliently associated with an implicature that it is:

(i) presupposed true,
(ii) adversative; i.e. concessive (meaning *although*).

By contrast, Fr. *tandis que*: "aussi longtemps que" > "pendant que" is attested with the GIIN of concessivity from about 1623 ("au lieu que" according to Wartburg 1928–66; "opposition dans la simultanéité" according to *Robert* 1993). In Late Middle Japanese (LMJ) *hodo ni* "to the (temporal, spatial, or quantitative) extent that" comes to be used in the meaning "because" (a meaning that later fell from use). Thus, from similar semantic beginnings, with similar IINs, different GIINs developed in different contexts (presumably temporal), hence different polysemies.

The overall concept of IITSC is modeled in figure 1.3. This is a model of the mechanism by which innovations may arise in the individual and be affected by community acceptance of salience, etc. For an innovation in the linguistic system of an individual to constitute a change "in the language," the innovation must be spread or propagated through the community: "a change in the output of a single speaker might be regarded as the locus of change in the system, whereas of course a change is not a change until it has been adopted by *more than one* speaker" (J. Milroy 1992; 79; italics original). If SP/Ws innovate, and AD/Rs replicate this innovation, they do so in the role of SP/Ws, i.e. as language producers, not as language perceivers.

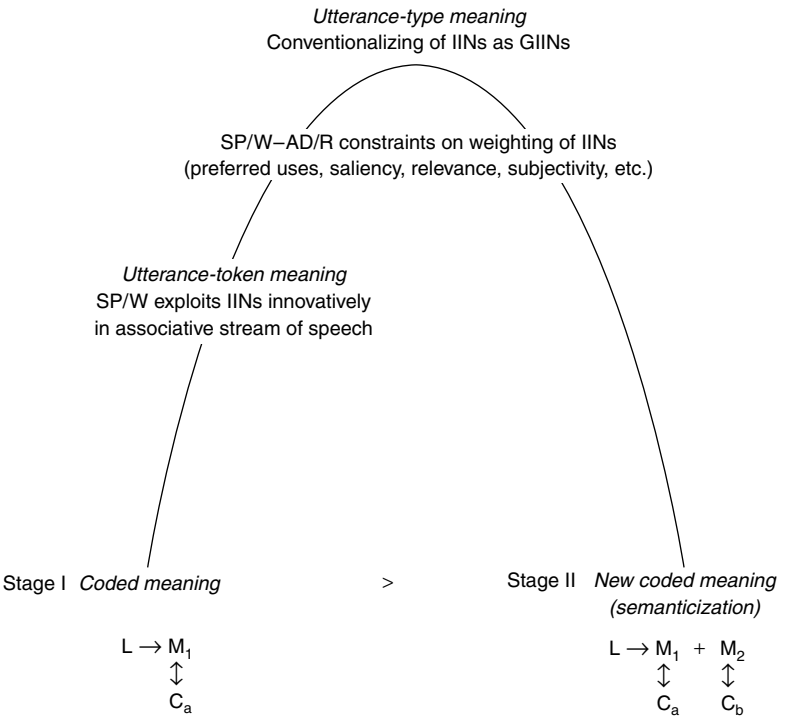

Figure 1.3. Model of the Invited Inferencing Theory of Semantic Change (IITSC; Traugott 1999a: 96) (M = Coded meaning; C = Conceptual structure).

Most studies of the role of metaphor in semantic change focus on the bottom part of the model (the relationships between two stages of a lexeme's history in terms of sources and targets, i.e. products, iconicities, and metaphors). Studies of the role of pragmatic inferencing in semantic change focus on the top part of the model and on the processes leading to change (e.g. using language indexically and metonymically). As we have pointed out above, the approaches are not mutually exclusive, but rather mutually enhancing (see also Heine, Claudi, and Hünnemeyer 1991, Andrews 1995); however, they involve significantly different perspectives. It should also be noted that this model, in keeping with the focus of both approaches on the development of new meanings and new polysemies, does not account for loss. Loss is unpredictable and irregular. Development of incremental meaning, however, is largely regular, and this is what the model attempts to account for.

The model in figure 1.3 operates recursively, i.e. M_1 represents any meaning that gives rise to invited inferencing. It may itself be historically derived, by prior invited inferencing, metaphorization, interventive meaning change, etc. In the case of the history of *as long as*, the original M_1 relevant to the development of the temporal meaning was spatial (resulting in M_1 (spatial) + M_2 (temporal)); once we find that the temporal polysemy had arisen, we can "reset" the model so that M_1 is the temporal meaning, which eventually gives rise to the conditional (i.e. M_1 (temporal) + M_2 (conditional)). In indexing the polysemies, it is, however, essential to keep them separate, since older meanings continue to invite inferences and may themselves undergo change, leading to further developments.

It might be asked whether M_1 is an appropriate designation at Stage II. Given a theory of totally discrete change it would not be. Under such a theory, the original M (e.g. temporal) with its various associated meanings would probably be considered different from a later (but also temporal) polysemy because the semantic space would be divided up differently after the new polysemy (e.g. conditional) had been semanticized. This could be captured by a rule such as:

(22) $$\text{M (temporal + conditional inferences)} > \begin{bmatrix} M_1 \text{ (temporal)} \\ M_2 \text{ (conditional)} \end{bmatrix}$$

However, this would obscure the fact that IINs and GIINs from the earlier meaning continue to be available in certain contexts i.e. are stable across time as well as contexts. This is because Ms are always somewhat underdetermined. For example, *since* is sometimes unambiguous in its temporal and causal meanings, sometimes ambiguous, and sometimes indeterminate; temporal *since* still allows causality to be exploited as an invited inference, as in *Since coming to the US, she has been very happy*.

truth-conditional		>		non-truth-conditional
content	>	content/procedural	>	procedural
s-w-proposition	>	s-o-proposition	>	s-o-discourse
nonsubjective	>	subjective	>	intersubjective

Figure 1.4. Correlated paths of directionality in semantic change (in this and subsequent figures, s-w = scope within; s-o = scope over).

The model does not specify the mechanisms by which semantic change comes about: metaphorization and metonymization (including subjectification and intersubjectification). These are pragmatic processes that lie behind SP/W's exploitation of available implicatures in the flow of speech and writing. It follows from the recursive operation of the IITSC model that meanings become increasingly pragmatic and procedural since the operative constraints are saliency, subjectivity, etc., i.e., constraints that flow from the linking of communicative and cognitive functions that is language. It also follows that there is tendency toward metatextual meaning, or more specifically a shift from *de re* to *de dicto* meaning (see Frajzyngier 1991 for this way of describing shifts from "the world being talked about" to "the speaker's organization of that world in the act of speaking" (Traugott 1980: 47)). Such shifts typically involve increase in scope, from meanings that function at the propositional level (e.g. manner adverbials in event structures), to meanings with scope over the proposition (e.g. sentential adverbials), to meanings with scope over the discourse unit (e.g. adverbials in discourse marker function). These trajectories may be schematized as in figure 1.4.

In this figure we indicate by "contentful/procedural" that if a contentful L acquires procedural meaning, it will usually do so via a polysemy that is both contentful and procedural (for example as long as "if" is contentful with respect to hypotheticality, and procedural with respect to indicating that the clause it introduces is treated by SP/W as a ground for the matrix clause). Although correlated, the individual horizontal trajectories are not necessarily vertically aligned; so different aspects of any one semasiological change may be at some different point on the horizontal trajectory of a particular L. It should be recalled that "layering" always occurs between a first and a second stage, sometimes between all stages. This and subsequent figures of a similar nature show only the changes, not the retentions in meaning.

It should be noted that although we are focusing on what is usually called "internal" change, in the sense defined above as "natural" and largely unconscious change, the mechanisms for change as outlined in this IITSC model of semantic change are external. This is because the mechanisms involve processes of reasoning, mental projection, association, focusing on salient issues (whether driven by social factors or SP/W's own perspective), etc., none of which are part of the language system, but rather are processes brought to bear on this system in language use.