Chapter 1
Introduction: The Lexicon

1.1 Preliminaries

Although linguists struggle to make sense of the grammatical patterns of human languages, children take a mere two years or less to discover most of the grammar and much of the basic vocabulary of their native language. Modern linguistics relies on the hunch (due in its modern form to Chomsky) that the child is so successful because a basic linguistic system and the ability to use this system are somehow enshrined in the child's biology. The linguist labors to describe this system in a manner accessible to conscious thought, but the child simply *has* the system. Linguistic experience, combined with the properties of the innate system, yields the native language that the child comes to know and use.

It follows from the hunch just described that hypotheses about language should put as small a burden as possible on the child's linguistic experience and as great a burden as possible on the biologically given system, which we call *Universal Grammar* (*UG*). Of course, the role of experience is not zero, or else every detail of language would be fixed along genetic lines. Nonetheless, given the facts that linguistics tries to explain, the null hypothesis should place the role of experience as close to zero as possible. In practical terms, this means that the linguist's null hypothesis should start with no role for experience. Those linguistic facts that can only be ascribed to experience can then be characterized cautiously. Everything else should arise from the interaction of these experience-induced facts with UG.

One area where experience is clearly relevant is the *lexicon*. Children simply do acquire lexical entries. As a bare minimum, these lexical entries consist of arbitrary pairs of sounds and meanings. Knowledge of these pairings is obviously a result of the child's linguistic experience. Nonethe-

less, the lexicon is no place to abandon a cautious approach to the role of experience in language acquisition. As with any aspect of language, proposals about the lexicon should proceed from the null hypothesis that *nothing* is acquired through experience, progressing with cautious and conservative steps toward an understanding of exactly what is acquired through experience and how.

In fact, traditional discussions of the lexicon often presuppose more content than the mere pairing of sound with meaning—and not without reason. For one thing, lexical items also impose various requirements on the syntactic *structures* in which they find themselves. These other requirements form part of the speaker's knowledge of those lexical items. This is clearest in the case of argument-taking categories: verbs, adjectives, nominalizations like *destruction* and *eagerness*, as well as nouns like *father*. For argument-taking lexical items, these include three crucial bits of information: semantic selection (*s-selection*), selection for syntactic categories (*c*-selection), and assignment of arguments to syntactic positions (*linking*).

S-selection is quite basic. It is nothing more than the consequences for argument structure of a predicate's lexical semantics. This includes selection for independent categories like *proposition* or *thing* as well as selection for relational categories like *Agent* or *Patient*. Thus, the fact that we utter but do not eat propositions entails that a verb like *say* allows a propositional argument whereas *eat* does not. The semantics of wonderment and belief entail that *wonder* takes an interrogative argument whereas *believe* does not. Likewise, the semantics of all these verbs tell us the semantic relations borne by their arguments (Agents, Experiencers, etc.). One could not conceive of a verb that meant 'say' that did not take an Agent argument.

(1) a. Suo said that the world is round.
b. *Sue ate that the world is round.

(2) a. Bill wonders whether the world is round.
b. *Bill believes whether the world is round.

Linking is a bit less basic, involving the relation between the semantic categories of a predicate's arguments and their syntactic positions. Linking tells us that the propositional argument of *believe* in (3) is its object and not its subject, that the Agent of *throw* is a subject, not an object in (4), and that *like* and *please* differ in the placement of their Experiencer argument in (5).

(3) a. Sue believed that the world is round.
b. *That the world is round believed Sue.

(4) a. Bill threw the ball.
b. *The ball threw Bill. [with *Bill* as Agent]

(5) a. Mary liked the play.
b. *The play liked Mary.
c. The play pleased Mary.
d. *Mary pleased the play.

C-selection, in addition to s-selection, is relevant to the facts in (1) and (2). *Say*, but not *eat*, c-selects a CP complement; *wonder* and *believe* differ in whether the subordinate Comp triggers *wh*-movement. Furthermore, c-selection tells us that the interrogative argument of *ask* may be a DP, whereas the interrogative argument of *wonder* may not in (6), and determines that the semantically close verbs *like* and *enjoy* differ in their ability to take an infinitival argument in (7).

(6) a. John asked the time.
b. *John wondered the time.

(7) a. She liked the concerto.
b. She liked hearing the concerto.
c. She liked to hear the concerto.
d. She enjoyed the concerto.
e. She enjoyed hearing the concerto.
f. *She enjoyed to hear the concerto.

Much work over the last decade has attempted to discover relationships among s-selection, c-selection, and linking. Since s-selection is so rooted in the irreducible pairing of sound and meaning, there have been persistent hopes and speculations that the lexical entries of predicates need not specify their c-selection and linking properties directly (Grimshaw 1979, 1981, Pesetsky 1982, Chomsky 1986b). If these speculations are correct, then theories that ascribe separate status to the s-selection, c-selection, and linking properties of lexical items are insufficiently cautious theories and should be reconsidered. If we pursue these speculations, the lexical entry of a predicate does not contain explicit information concerning c-selection or linking. Most instances of either must be explained as consequences of s-selection aided by principles of UG that map semantic categories onto syntactic categories and syntactic positions. Since s-selection

itself is an aspect of lexical semantics, we will have the best theory of the lexicon that we can hope for: children learn pairings of sound and meaning; UG does the rest.

Thus, for example, the fact that *eat* s-selects things, not propositions, along with the fact in UG that CPs do not denote things, is sufficient to explain (1). No particular c-selectional facts need be learned by the child. Likewise, if UG in general requires Agents to be linked to subject position, then the linking facts in (4) follow from the s-selectional properties of the main verb and the linking principles supplied by UG. No specific linking facts need be learned by the child. This reasoning has the (probably) correct consequence that the facts in (1) and (2) have cross-linguistic validity. We would not expect a verb meaning 'eat' to select a proposition, nor would we expect a verb meaning 'believe' to select an interrogative complement in any language.

The same reasoning can apply to morphologically complex lexical items, once UG is provided with the ability to project the argument structure of complex words from their component parts. Following Randall (1981), I will call this property *morphological inheritance*. Thus, an Agent-Patient verb like *destroy* will pass on its s-selectional properties to the process reading of *destruction* in accordance with mechanisms of morphological inheritance given by UG plus language-specific facts about the suffix *-ion*. For any nominalized verb a similar procedure can be expected to obtain.

Of course, no one supposes that pairings of sound and meaning can possibly exhaust the content of the lexicon. Once we leave c-selection, linking, and morphological inheritance, it is clear that language acquisition involves certain types of facts that can only be the consequence of experience. Thus, children learn facts about declension class, agreement class, and conjugation class, affixal status, availability as a host for affixation, selection for quirky Case, and other facts that attach themselves like barnacles to lexical entries. What aspects of lexical semantics coupled with what principles of UG could predict (5), (6), or (7), the fact that the past tense of *go* is *went*, that *-ion* suffixed to *destroy* yields *destruction*, or the fact that the Russian verb *vladet'* 'command' governs the instrumental Case? Our model of the lexicon should allow such facts to be acquired, but should do so grudgingly, limiting the acquisition of idiosyncratic facts to those that seem absolutely inescapably idiosyncratic, but explaining away c-selection and linking as by-products of s-selection and syntax.

Content with these methodological preliminaries, we might be tempted to rest on our speculative laurels and consider the description of lexical learning accomplished. This would be an error, since our picture could easily be wrong. Since the stakes are so high—an entire view of the logical problem of language acquisition—we must work hard to determine whether our view of the lexicon is tenable. Indeed, once we move away from cheap victories for UG like *believe* and *destruction* and obvious cases of experience-based acquisition like conjugation class and quirky Case, many problems and questions arise.

This book has a simple goal: to show that certain observations that seem to situate the lexicon far from our minimalist hopes actually resolve themselves in a satisfactory and exciting way once we dig deeper into the nature of things. In other words, this book seeks to reduce the number of problems with the a priori most attractive view of lexical acquisition.

Suppose we discover some pattern of c-selection, linking, or morphological inheritance that neither looks like declensional class or quirky Case nor is derivable from lexical semantics and current views of UG. There are two kinds of responses we might make. First, we might abandon the view that the lexicon is maximally simple to accommodate the case at hand, positing some new mechanism employed by the child in acquiring the pattern under discussion. Alternatively, we might modify our characterization of the problem in such a way that the problem disappears. We do this by changing our view of UG.

Of course, it is sound method to begin with some set of well-supported "off the rack" ideas about UG as a background to discussion. In linguistics, such sets of ideas are typically referred to as *frameworks*. Such frameworks are helpful because they provide links between different proposals and allow the linguist to focus on one problem without having to worry about every adjacent problem. Nonetheless, they are also pernicious, since as often as not, the solution to a problem that has not been solved lies in an idea that cannot quite be bought "off the rack." This book takes a framework as theoretical backdrop, but out of necessity develops a few new ideas not "off the rack" to reach its conclusions—the most notable case being the "Dual System" (including a Cascade Syntax) developed in chapters 6 and 7.

The framework with which I begin is the body of work that flows from the results reported in Chomsky 1981. This is usually called *Government-Binding Theory* (GB) or, more generally, *principles-and-parameters syntax*

(P&P). Where the choice among competing proposals in this literature is important, it will become clear which path I take as the discussion progresses.

A central novelty of this work is its approach to cross-linguistic variation. GB/P&P research has discovered principles of grammar that crosscut the traditional division of syntax into constructions typically named according to their key morpheme or semantic content, for example, *passive*, *reflexive*, or *wh-question*. The articulations of GB/P&P theories lie elsewhere, so that some properties of the passive construction are held in common with properties of reflexive anaphora, others with *wh-questions*. Syntactic differences among languages are attributed to the role of experience in choosing values for certain open parameters in the theory. Since the articulations of the theory largely crosscut traditional construction boundaries, the setting of a parameter for any articulation can be expected to have consequences that crosscut constructions. Although work on these questions is in its infancy, the approach appears to be productive. Surprising linkages between constructions of the sort expected in this approach are beginning to be discovered. To pick one recent example, Kayne (1990, 1991) shows that a single parameter links the relative positions of infinitive and clitic pronoun in Romance languages to the possibility of infinitival yes-no questions, and suggests that this is a direct consequence of Chomsky's (1986b) theory of pronoun and anaphor binding.

The same property of GB/P&P research that predicts surprising linkages in cross-linguistic variation yields surprising linkages for the linguist attempting to explain language. A slight change in theory, or even a relatively minor change in the analysis of some structure, can be expected to have surprising consequences over a range of linguistic constructions. This book presents some relatively banal proposals concerning a few constructions that pose serious problems for the "minimalist" view of linking and c-selection just discussed. I will try to show that these proposals, set against the backdrop of GB/P&P theories, provide a key to a large number of thorny problems concerning c-selection, linking, and morphological inheritance.

1.2 Zero Syntax

In this book (and in Pesetsky, in preparation), I propose that a series of problems concerning the lexicon can be solved by positing a phonologically zero derivational affix.

Phonologically zero *inflectional* morphemes are nothing new. It has always been common to posit a phonologically zero pluralizer in plural *sheep*, a zero participial morpheme for *come* in *I have come*. Furthermore, in theories of the French verb like those of Emonds (1976) and Pollock (1989), finite verbs move from V to Infl because of the affixal property of the finite morpheme occupying Infl.

(8) Nous $[_{\text{Infl}}\ parl_i\ [_{\text{Infl}}\ \text{-}ons]]$ $[_{\text{VP}}$ à peine t_i français].
+affix
we speak 1pl barely French
'We barely speak French.'

When the same sort of movement is attested without the phonological expression of Infl, we can only conclude that Infl contains a phonologically null affix.[1]

(9) Il $[_{\text{Infl}}\ parl_i\ [_{\text{Infl}}\ \emptyset]]$ $[_{\text{VP}}$ à peine t_i français].
he speak 3sg
'He barely speaks French.'

Phonologically zero derivational affixes are less well established. They are obvious mechanisms to propose for relating noun-verb pairs like $support_V/support_N$ or nominal and adjectival uses of *immortal*. I will discuss such cases in detail, in order to motivate some less obvious candidates for zero derivational morphology.

Where else might one posit phonologically zero derivational morphemes? There are a variety of circumstances in which such a proposal might be reasonable.

- Suppose a verb with a particular meaning is bimorphemic in Japanese, yet superficially monomorphemic in English. It would not be shocking if we were to learn that the relevant form is bimorphemic in both languages, except that one of the morphemes is phonologically null in English.

(10) a. Sono sirase-ga Tanaka-o kanasim-sase-ta.
that news-NOM Tanaka-ACC be sad-CAUSE-past
'That news saddened Tanaka.'
b. The news [*CAUS* [depressed $_V$]$_V$] Bill.

- One might posit a null morpheme in a more general circumstance. Suppose the same phonological form is used in two senses, one more complex than the other. One might attribute the greater complexity in the second sense to vagueness, or else one might posit a phonologically null

morpheme that adds the complexity. Thus, consider the use of adjectives like *nervous* or *happy* when predicated directly of animate beings (*Mary is nervous*) and when predicated of the behavior of animate beings (*Her manner is nervous*). In the latter use, *nervous* means something like *suggests nervousness on her part*. This added complexity might be contributed by a morpheme, which we could call *SUG*, though it has no phonological form.

(11) Her manner was [[nervous $_A$] *SUG* $_A$].

• Next consider a construction involving two DP objects, where the second object has no visible source for abstract Case. Suppose that the second object is asymmetrically c-commanded by the first with no visible heads creating the asymmetry. Suppose further that this construction has a near synonym in which one of the objects is introduced with a preposition. It might be plausible to propose that the second DP in this double object construction is in fact the object of a phonologically null preposition. It might not be implausible (though not motivated at present) to propose that this preposition is affixed by head movement to the main verb of the construction.

(12) They [P_i [give $_V$]$_V$] Bill [$_P$ t_i] books.

• Now consider a construction involving an embedded finite clause, in which the embedded clause is not introduced by a phonologically overt complementizer. Following Stowell (1981) and Kayne (1984a:chap. 5), we might propose that these constructions actually are introduced by a complementizer—namely, a phonologically null complementizer. Once again, it might not be implausible (though unmotivated for the moment) to affix this complementizer to the higher verb.

(13) They [$Comp_i$ [announced $_V$]$_V$] [$_{CP}$ t_i [$_{IP}$ the train was about to leave]].

In later work (Pesetsky, in preparation), I will show that the affixation in (13) accounts for gaps in the distribution of this zero complementizer in subject and adjunct sentences.

• Finally, the same analysis might be accorded to an embedded infinitival clause like that in (14).

(14) They [$Comp_i$ [considered $_V$]$_V$] [$_{CP}$ t_i [$_{IP}$ Bill to be happy]].

In Pesetsky, in preparation, I will also show that affixation of the null complementizer to *consider* in (14) explains the fact that *consider* governs

the embedded subject. This will capture the effects of Chomsky's (1981) proposal of CP-deletion.

Of course, it is one thing to demonstrate circumstances in which zero morphemes are "not implausible," and quite another to demonstrate their existence. This will be my task here and in Pesetsky, in preparation. For now, by way of introduction, note that each construction mentioned above shows a peculiar morphological gap: nominalization of the expected sort cannot take place.

(15) a. *the book's annoyance of Bill
b. *her manner's nervousness
c. *their gift of Bill (of) books
d. *their announcement the train was about to leave
e. *their consideration (of) Bill to be happy

Under the analyses that I will suggest, the examples in (15) all show a nominalizing suffix attached to a zero-derived form.

(16) a. *the book's [[[annoy $_V$] *CAUS* $_V$] ance $_N$] of Bill
b. *her manner's [[[nervous $_A$] *SUG* $_A$] ness $_N$]
c. *their [[P_i [gif- $_V$]$_V$] -t $_N$] of [$_{PP}$ Bill [t_i $_P$] books]
d. *their [[$Comp_i$ [announce $_V$]$_V$] ment $_N$] [$_{CP}$ t_i [$_{IP}$ the train was about to leave]]
e. *their [[$Comp_i$ [consider $_V$]$_V$] ation $_N$] (of) [$_{CP}$ t_i [$_{IP}$ Bill to be happy]]

Furthermore, these examples all contrast with similar examples that do not involve zero derivation and show no difficulty undergoing nominalization. Noncausative psychological nominalizations, predication by *nervous* of human experiencers, dative verbs with overt *to*, proposition-taking nominals with overt complementizers—all lack the slightest hint of evidence for zero morphology, and all avoid the problems that star the examples in (15)–(16).

(17) a. Bill's [[annoy $_V$] ance $_N$] at the book
b. her [[nervous $_A$] ness $_N$]
c. their [[gif- $_V$] -t $_N$] of [$_{PP}$ books to Bill]
d. their [[announce $_V$] ment $_N$] [$_{CP}$ that [$_{IP}$ the train was about to leave]]
e. la sua [[suppos $_V$] izione $_N$] [$_{Comp}$ di [$_{IP}$ PRO essere felice]] [Italian]
his/her consideration Comp to be happy

In the consistent impossibility of nominalization in (15) and its acceptability in (17), we have a good hint that the examples displayed in (15) have something in common. The plausibility of zero affixation in each case invites us to explore the possibility that zero affixation is actually found in these cases. In the course of this book, I will show that zero affixation provides a crucial clue that helps us resolve problems for the minimalist lexicon hypothesis. I will also suggest a general picture of affixation in which the stars in (16) are expected.

In chapters 6 and 7, I will make a second, equally banal proposal. This proposal, which I will call the *Dual System*, posits two types of structural organization in predicate-headed phrases like VP. One, *Layered Syntax*, is based on simple principles that map selectional relations into structural relations, yielding structures like those traditional in syntax through the 1970s. The other, *Cascade Syntax*, creates quite different structures from a minor modification of these principles: in essence, permitting selection of specifiers of sisters as well as sisters. When this proposal is combined with the first, not only the problems that arose in the first half of the book, but a variety of others as well, find a solution. These include

1. why prepositions sometimes seem to be overlooked for c-command relations;
2. why the structure induced by prepositions is overlooked by coordination;
3. why heavy NP shift acts like both upward and downward movement;
4. why there are limitations on the occurrence of *to* in the double object alternation.

If it is on the right track, this book will advance the central program of modern linguistics: to characterize UG and the fruits of linguistic experience, putting as much burden as is plausible on the former and as little as possible on the latter. More than that, the sort of results reported here fall within a large field of results that validate linguistics itself. The only doctrine of linguistics is the conviction that the facts of language pose puzzles that can be solved—that language has a shape, forms a system. The very structure of this work demonstrates the point: it starts by noting problems with the lexicon, solves these problems with the help of a novel syntactic proposal, and then discovers that the novel syntactic proposal solves other so far intractable problems. This is the sort of structure one expects from an extended investigation of an orderly, law-governed system like human language.

Chapter 2

Linking Problems with Experiencer Predicates

2.1 Linking

In this chapter, I will first discuss general problems for theories of linking. Specific linking problems with Experiencer predicates will then lead me to consider some solutions that are attractive yet, I believe, ultimately flawed. In the next chapter, these problems will lead to proposals concerning zero morphology.

The child who has acquired a verb such as *push* in *John pushed Bill* knows that the Agent (John) is "linked" to subject position and the Patient (Bill) is linked to object position. Must the child learn linking facts on an item-by-item basis? The strongest and most attractive answer is, of course, no. For active Agent-Patient verbs, it is quite tempting to argue that UG maps Agent uniformly onto subject, and Patient onto object.[2] Can we extend this sort of reduction to other lexical items? The optimistic hypothesis that we can was a mainstay of much work in Generative Semantics and has been recently revived in its strongest form by Baker (1988:46) as the *Uniformity of Theta Assignment Hypothesis*.

(18) *Uniformity of Theta Assignment Hypothesis* (*UTAH*)
Identical thematic relationships between items are represented by identical structural relationships between those items at the level of D-Structure.

A slightly weaker condition was earlier proposed by Perlmutter and Postal (1984) as their *Universal Alignment Hypothesis*.

(19) *Universal Alignment Hypothesis* (*UAH*)
There exist principles of UG which predict the initial relation borne by *each* [argument] in a given clause from the meaning of the clause.[3]

The UAH as stated in (19) is weaker than the UTAH in that it does not require *identical* syntactic linking patterns in cases of semantic identity, but merely requires *predictable* linking patterns.[4] Exploiting the happy coincidence of initials, I will refer to the family of hypotheses that includes the UTAH and the UAH as the *U(T)AH*. U(T)AH hypotheses are important because they provide plausible (albeit partial) explanations for the rapidity of language acquisition. It is a truism that the more regular the correspondences are between sound, structure, and meaning, the less there is for the child to learn.[5]

The U(T)AH is worth investigating because it is a very obvious and optimistic proposal. It is also worth investigating because there are many apparent counterexamples that could bring it down. The purpose of this study is to explore two very different ways of explaining apparent counterexamples to the U(T)AH. I wish to show that both methods are fruitful, and that only rather extensive investigation can decide whether these apparent counterexamples are genuine, or yield to the first method of explaining apparent counterexamples, or yield to the second. The specific domain of investigation will be Experiencer (or "psychological") predicates, but we can first examine the general questions on the basis of somewhat less controversial examples.

First consider Baker's UTAH, the strongest form of the U(T)AH. One sort of case that puts it to the test is an instance where one and the same type of argument appears to be assigned to more than one grammatical relation. A familiar example of this is the inchoative/causative alternation seen in well-known pairs like these:

(20) a. The ice melted.
b. Bill melted the ice.

(21) a. The door opened.
b. Sue opened the door.

(22) a. The ship sank.
b. Bill sank the ship.

In the (a) examples, the Patient or Theme argument is found in subject position; in the (b) examples, it is found in object position. How can these data be reconciled with the UTAH? There are three general types of solutions.

1. *Finer-grained syntax* There is more to the syntax than meets the eye. Closer examination of the syntax will show that the apparent syntactic identity between the subject of the (a) sentence and the subject of the (b) sentence is false. The superficial subjects of the (a) sentences are D-Structure objects. There is no problem for the UTAH.

2. *Finer-grained semantics* There is more to the semantics than meets the eye. Closer examination of the semantics will show that the apparent semantic identity between the subject of the (a) sentence and the object of the (b) sentence is false. Once more, there is no problem for the UTAH.

3. *Abandonment of the UTAH* The UTAH is wrong, and weaker hypotheses (e.g., the UAH, or the assumption of total arbitrariness) should be examined.

A "type 1" approach leads to the best-known and probably correct solution for the data in (20)–(22): an *unaccusative* analysis for the (a) examples. This analysis holds that certain subjects are underlying objects, as illustrated in (23).

(23) a. [e] melted [the ice].

b. Bill melted [the ice].

For the problem raised by (20)–(22), the literature contains abundant evidence for the hypothesis sketched in (23). Indeed, this evidence itself provides support for the derivation of certain linking patterns from UG. Were it not for UG principles, there would be no reason for the child to assume that the underlying structure for a sentence like *The boat sank* differs significantly from its PF representation. Nonetheless, even if we suppose that the UTAH in its strongest form is correct, the fact that a type 1 approach proved fruitful for this particular problem does not mean that *every* problem for the U(T)AH will have a solution along these lines.

Let us look at type 2 solutions. Both of the U(T)AH hypotheses hinge crucially on a theory of lexical meaning. This is central to the notion "identity" invoked by Baker's UTAH, which should probably be replaced by some notion of "similarity" with respect to some property. Not all detectable semantic distinctions are of syntactic relevance. Two predicates might show subtle or even glaring semantic differences that are irrelevant to the syntax. Clauses containing these predicates will count as "equivalent in meaning" and will display "equivalent thematic relationships" for the U(T)AH, despite their semantic differences.

For example, though there are doubtless relevant and identifiable distinctions between *shout* and *whisper*, *amble* and *scamper*,[6] or even *shout* and *holler*, these distinctions probably play no role at all in syntax/

semantics interactions. Both *shout* and *whisper*, for example, have properties characteristic of agentive predicates; their Agent argument is a subject. Both verbs share selectional properties characteristic of manner-of-speaking verbs (e.g., nonextractability of adjuncts from their complements). Both verbs resist deletion of the complementizer of a complement *that*-clause. There are very palpable differences between the meanings of *shout* and *whisper;* these differences are simply of no consequence for syntax.

The relationship between semantics and syntax in this case is similar to the relationship between phonetics and phonology. For example, the side of the mouth chosen to articulate lateral consonants is a gross and obvious physiological fact—but one of no known phonological relevance. The exact degree of lip pursing during production of a rounded vowel may be quite observable, but is similarly of no phonological relevance. For the phonetics-phonology interface, the theoretical instantiation of these observations is feature theory, which gives a particular sort of coarse phonological grain to the continuum of phonetic reality. For the semantics-syntax interface, there may be a number of analogous theoretical constructs. One is θ-theory, where many observable semantic distinctions are ignored in favor of a coarse, grainy classification.

That said, however, the nature of the graininess and the identity of the grains is an empirical question. For example, it seems that the distinction between "verbs of loud speech" and "verbs of quiet speech" (e.g., *holler* and *shout* vs. *whisper* and *murmur*) is syntactically irrelevant, but the distinction between "verbs of manner of speaking" (including both *holler* and *whisper*) and "verbs of content of speaking" (e.g., *say*, *propose*) is not irrelevant. Verbs of the latter class in English do not resist adjunct extraction and allow complementizer deletion.[7]

Let us return to the pairs in (20)–(22). Suppose one were able to argue for a type 2 solution to this problem. The holder of this view would claim that the alleged semantic identity between the subjects of the (a) sentences and the objects of the (b) sentences is incorrect and based on an excessively coarse-grained semantic analysis. Suppose, for example, that the subject of (20a) were to turn out to be a Theme_a, and the object of (20b) were to turn out to be a Theme_b, where Theme_a and Theme_b were semantically distinct in some fashion. Whether the distinction between Theme_a and Theme_b is relevant to the syntax would then be an empirical matter. If the distinction were relevant to the syntax, we would then propose that UG includes the following statements:

(24) a. Agent is mapped to subject.
b. Theme_a is mapped to subject.
c. Theme_b is mapped to object.

We would want to ask *why* these principles are the way they are, of course (see Levin and Rappaport 1988c). Nonetheless, independent of this question, such principles would yield an alternative analysis of the data in (20)–(22) that does not conflict with the UTAH. The difficulty with this approach applied to the data in (20)–(22), of course, is the existence of strong evidence for the Unaccusative Hypothesis and the nonexistence of any evidence whatsoever for a systematic distinction between Theme_a and Theme_b. For this reason, there has been no attempt (of which I am aware) to deal with the data in (20)–(22) from the perspective of finer-grained semantics.[8] A priori, however, either approach might have turned out to be correct, and both approaches preserve the UTAH.

Now let us consider the weaker version of the U(T)AH, Perlmutter and Postal's UAH. This condition allows a variety of solutions to the problem posed by (20)–(22), so long as the initial relation borne by every argument is predictable. For example, the following rules would cover (20)–(22), respect the UAH, but violate the UTAH (see Chomsky 1972:171, (55)):

(25) a. Agent (Causer) is assigned to subject.
b. Theme (Patient) is assigned to subject, unless another argument is assigned to subject by rule (25a), in which case Theme (Patient) is assigned to object.

The linking theory outlined by Bresnan and Kanerva (1989) is a theory of this general sort, respecting the UAH, but not the UTAH.[9]

Even if we grant that the U(T)AH can be successfully defended for cases like (20)–(22), we must still ask whether the defense is well founded. Are there cases that force us toward a type 3 solution—abandonment of the UTAH? Rosen (1984) has argued that there are such cases, on the basis of cross-linguistic as well as language-internal linking patterns. If the UAH is an aid in language acquisition, then the rules governing linking are surely a property of UG and should not be susceptible to random cross-language variation. With this conclusion in mind, Rosen notes that there is cross-linguistic variability in the unaccusativity/unergativity of a number of predicates, including verbs glossed as 'bleed', 'die', 'suffer', and 'be hungry'. More troubling still, she also notes variability internal to Italian both with verbs of "bodily function" like 'snore' and 'blush' and with motion verbs like 'fall' and 'walk'.

(26) a. Mario è arrossito. [unaccusative]
Mario blushed (Rosen's (79a))
b. Mario ha russato. [unergative]
Mario snored (Rosen's (78a))

(27) a. Luigi è caduto apposta. [unaccusative]
Luigi fell on purpose (Rosen's (76a))
b. Ugo ha camminato meglio ieri. [unergative]
Ugo walked better yesterday (after Rosen's (86a))

Rosen concludes that the UAH is simply incorrect.[10] It is entirely possible, however, that some of these apparent deviations from principles believed to govern unaccusativity should be explained as sketched above, by taking a finer-grained (or simply different) view of the semantics of the relevant verbs. For motion verbs, for example, Levin and Rappaport (1988a) have successfully pursued the finer-grained semantics approach and shown that the seemingly unpredictable distribution of motion verbs is actually predictable from two generalizations. The first concerns whether the verb's meaning "includes a specification of inherent direction" (which explains (27a–b)).[11] The second concerns whether the verb's meaning "specifies a direct external cause" (which explains other problematic cases). Further research along these lines might well bring order to the apparent chaos of 'snore' versus 'blush', as Levin and Rappaport note, but so far nothing has been established about these cases.[12]

Nonetheless, even if there *are* domains within which linking is unpredictable, such as predicates of involuntary bodily function, Rosen's own data suggest that weaker forms of the U(T)AH can be maintained.

(28) *UTAH (weaker version)*
Identical thematic relationships between *certain* categories of items are represented by identical structural relationships between those items at the level of D-Structure.

(29) *UAH (weaker version)*
For *certain* types of arguments, there exist principles of UG that predict the initial relation that they bear in a given clause from the meaning of the clause.

The addition of the word *certain* in the weaker versions of the U(T)AH does not void them of content. The absence of totally predictable linking does not mean that the child cannot take advantage of what predictability is available. For example, none of Rosen's examples of apparent capriciousness (apart from motion verbs) involves agentive predicates. Rules for the linking of Agent appear to apply without exceptions, even though some other argument types might display fluctuations. If the assignment of semantic relations to grammatical functions were idiosyncratic and chaotic, we would not expect to find this sort of regularity. I will speak of arguments such as Agents whose linking patterns are predictable as *falling under* the U(T)AH, meaning by this that Agent arguments are among those whose syntactic representation is always the same (UTAH) or is always predictable (UAH).[13] As for arguments that do not fall under the U(T)AH (if such arguments exist), these might need special stipulations. Even so, the language learner might not have to learn such stipulations for every argument: in the case of the subjects of involuntary bodily function verbs meaning 'blush' or 'sneeze', we would then assume that an unaccusative analysis is the default, but that some expected unaccusatives may be idiosyncratically assigned to the unergative class. We might then still claim that Theme arguments fall under the U(T)AH as the unmarked case. More research would be needed to establish this, so I will leave the matter open (see Postal 1986:31).

Obviously, the original versions of the U(T)AH are the strongest and most interesting. The stronger versions, if true, require less of the language learner than the weaker versions do. On the other hand, even if the stronger versions are false, the U(T)AH in any form is still of great importance. Requiring a little of the language learner is still better than requiring a lot.

What does this suggest for the investigation of unaccusative verbs? Rosen's proposal is that *nothing* falls under the U(T)AH in the sense described above. Baker's and Perlmutter and Postal's proposals are that *all* argument types fall under the U(T)AH. Even if Baker and Perlmutter and Postal are wrong, the null hypothesis of the researcher faced with any pattern of linking should be that *the pattern does fall under the U(T)AH.* Our initial assumption in any given instance should be that linking is predictable, until facts prove otherwise. If we do not take this as the null hypothesis, then we will not only be "making life difficult" for the language learner, we will also be learning nothing about the subject. The two general methodologies available for solving problems with the U(T)AH are the finer-grained syntax approach and the finer-grained semantic approach sketched above.

With the preceding discussion as guide, we are now in a position to tackle a particularly well known and controversial problem: the linking of

Experiencer predicates. Like Rosen's examples, these seem at first blush like counterexamples to both the UTAH and the UAH. I will suggest that this particular linking problem provides an excellent example of the points sketched above. The familiar linking problem with Experiencer verbs cannot be uniformly solved either by an unaccusative analysis or by refining the semantics. The linking problem is actually two problems: for one set of predicates, the problem is solvable in unaccusative terms; for another set of predicates, the problem is not solvable in this way, but does yield to a finer semantic analysis.

Experiencer predicates present a problem for the U(T)AH because of pairs like those in (30)–(41).

(30) a. Bill was very angry at the article in the *Times*.
b. The article in the *Times* angered/enraged Bill.

(31) a. The paleontologist liked/loved/adored the fossil.
b. The fossil pleased/delighted/overjoyed the paleontologist.

(32) a. Bill disliked/hated/detested John's house.
b. John's house displeased/irritated/infuriated Bill.

(33) a. Bill was satisfied/content with the Chinese dinner.
b. The Chinese dinner satisfied/contented Bill.

(34) a. Sue resented Bill's remarks.
b. Bill's remarks embittered Sue.

(35) a. Mary rejoiced at the French victory.
b. The French victory cheered/exhilarated Mary.

(36) a. John worried about the television set.
b. The television set worried John.

(37) a. Bill was furious about/fumed about the article in the *Times*.
b. The article in the *Times* infuriated Bill.

(38) a. Sue's remarks puzzled us.
b. We puzzled over Sue's remarks.

(39) a. Sue grieved over/at the court decision.
b. The court decision grieved Sue.

(40) a. John is bored with the problem of lexical entries.
b. The problem of lexical entries bores John.

(41) a. Bill fears/is afraid of ghosts.
b. Ghosts frighten Bill.

Pairs such as these suggest at first sight that for Experiencer predicates, linking is arbitrary. This is the case because, on the most straightforward and obvious analysis of (30)–(41), all the examples display the same two θ-roles. Belletti and Rizzi (1988) call these roles *Experiencer* and *Theme*. An analysis of the (a)–(b) contrast in (30)–(41) that assumes arbitrariness is sketched in (42), where the underscored argument must c-command all other arguments.

(42) a. predicate (Exper, Theme)
b. predicate (Exper, Theme)

In the (a) examples, Experiencer is the subject, and Theme is the object; in the (b) examples, Theme is the subject, and Experiencer is the object. I will henceforth call the predicates in the (a) examples the *Subject Experiencer* (*SubjExp*) class, and the predicates in the (b) examples the *Object Experiencer* (*ObjExp*) class. If the "straightforward" view were correct, then the existence of these two classes would show that these Experiencer verbs refute the U(T)AH hypotheses in its strongest forms. The arguments in (30)–(41) would not fall under the U(T)AH.[14]

2.2 An Unaccusative Solution to the Experiencer-Object Problem

Belletti and Rizzi (1988; henceforth *B&R*) have argued at length that the problem seen in (30)–(41) is simply a species of the problem seen in (20)–(22). They thus propose a solution along the lines of the type 1 possibilities discussed above: a finer-grained syntax in the form of an unaccusative analysis for the ObjExp predicates. According to them, although the S-Structure representations for SubjExp and ObjExp class predicates differ sharply, their D-Structure representations are identical in most respects. If B&R are correct, then these predicates pose few problems for the U(T)AH.[15]

In particular, B&R propose the linking principle in (43).

(43) *Linking Principle for Experiencer Verbs*
Given a θ-grid [Experiencer, Theme], the Experiencer is projected to a higher position than the Theme. (B&R's (119))

The Experiencer position is sometimes the traditional subject position (with SubjExp predicates) and sometimes a VP-internal position higher than direct object (with ObjExp predicates). The Theme position is always the underlying direct object position.

How are predicates of the ObjExp class derived on such an analysis? Recall that the ObjExp class shows Theme in S-Structure subject position.

B&R argue that this is the result of movement, as with more traditional unaccusatives.

(44) Theme_i $[_{VP}[_V, V\ e_i]$ Exper]

B&R's proposal is entirely in line with our discussion of linking. It represents a type 1 solution to the problems for the U(T)AH that are raised by the SubjExp ~ ObjExp alternation. It is also the best, most thoroughly worked out discussion of these predicates in a structure-based theory of grammatical relations.

Nonetheless, we will see that this solution is as wrong as it is right. In some ways ObjExp constructions behave as B&R's solution predicts, but in other ways they behave in a completely contrary fashion. When we chase down the solutions to these paradoxes in the next few chapters, we will discover an entirely new view of the VP, which brings dividends of its own and helps us solve the problems with which we started.

In a movement-based analysis of the sort pioneered by Burzio (1981), unaccusative verbs have two properties. First, they do not have a designated external (or subject) argument, allowing for an athematic subject position. Second, they license movement or a movement-like relation between an internal argument position and the normal position for external arguments. We may divide arguments for the unaccusativity of ObjExp verbs into those that point to an athematic subject position and those that point to a movement-like relation between internal and external positions. In Italian and in English (as well as Dutch, among other languages), there are indeed ObjExp verbs that have both properties associated with unaccusativity, but only a proper subset of the ObjExp verbs fall into this "pure" category.

Another (larger) group of ObjExp verbs are not unaccusative in the straightforward fashion that allows B&R's solution to the linking problem. These verbs, I will suggest, do license a movement-like relation between their internal argument position and subject position, but do not show the other unaccusative property—an athematic subject position. The solution to this unaccusativity paradox, coupled with a type 2 analysis in terms of a finer-grained semantics, not only will put our minds at ease about ObjExp verbs (a minor result) but also will reveal properties of the mapping between argument structures and S-Structure representations that have remained unexplored in previous work.

Thus, some of my conclusions will be conservative and some will be more radical. Among the conservative conclusions will be the results concerning "pure" unaccusative ObjExp verbs. ObjExp predicates in languages like Italian and Dutch fall into two very obvious subclasses with respect to compound past tenses: some take the auxiliary 'be' normally associated with unaccusatives (e.g., Italian *piacere* 'please'). For these verbs, my unaccusative analysis will be unsurprising. Others take the auxiliary 'have', normally associated with unergatives (e.g., Italian *preoccupare* 'worry'). For these verbs, therefore, an unaccusative analysis like B&R's *would* be surprising. I will argue that the "surprising" part of B&R's analysis is the incorrect part.[16] These are the verbs for which a finer-grained semantics will be important. These verbs will also turn out to be unaccusative in the partial sense mentioned above, but finer-grained semantics, and not unaccusativity, will be relevant to the solution for their linking problems.

In particular, I will argue that the label "Theme" as applied to the non-Experiencer in (30)–(41) incorrectly lumps together a number of distinct θ-roles. Once these roles are distinguished, the problem for the U(T)AH disappears. (The same distinctions are found in English, where there is no auxiliary selection to guide us.) In its stead, however, a new problem appears; this problem will lead to a "bimorphemic" analysis of the non-unaccusative ObjExp verbs (somewhat reminiscent of work in Generative Semantics (Akatsuka 1976)), involving zero causative morphology. The special properties of this zero causative morpheme will solve the problem that motivated its existence in the first place. Finally, the zero causative morpheme will also help resolve the unaccusativity paradox that originally led us into the discussion.

The initial discussion of B&R's proposal will introduce points and examples that will become important as the analysis progresses. Though this preliminary discussion may appear negative, it will lead to points and observations that are extremely important later. The critique of B&R's solution is the vehicle for discovering the solution presented in this book.

Let us now consider B&R's unaccusative solution more carefully. I will focus on English and Italian data, and will begin with B&R's arguments that the subject of ObjExp predicates is athematic.

2.3 Verbal Passivization

B&R claim that the nature of passive forms from ObjExp verbs argues for the absence of a thematic external argument. I will suggest on several fronts that this conclusion is incorrect.

A characteristic property of unaccusative verbs in many languages, identified by Perlmutter and Postal (1984) and discussed by Perlmutter and Zaenen (1984), Marantz (1984), and others, is their incompatibility with passive morphology. This property is explained within Relational Grammar as a consequence of the *1-Advancement Exclusiveness Law*. Working within a phrase-structural theory of passive advancement, Marantz (pp. 144–49) explains this incompatibility in a different way, as a consequence of two claims.

(45) a. Passive morphology absorbs the *external* (underscored) θ-role.
b. Vacuous dethematization is impossible.

More recently, Baker, Johnson, and Roberts (1989), developing ideas by Jaeggli (1986b), suggest that the passive affix does not *deprive* a verb of its external argument role, but actually functions as an argument nominal and *receives* the external argument role. Under this theory, if a passivized verb has no external argument role, the passive affix stands in violation of the θ-Criterion.

Whether or not the "external argument" must be syntactically external to all projections of its predicate, as suggested by Williams (1981), is a separate issue, related to recent work on the VP-Internal Subject Hypothesis (which I have adopted here). Clearly, one argument may be marked as special, since it is this argument that is absorbed by or assigned to the passive affix. When this special argument is missing, as with unaccusative verbs, passive is impossible. Whatever the proper account of this phenomenon, it is of great interest that many English ObjExp verbs seem to passivize freely.

(46) a. Bill was angered by Mary's conduct.
b. The paleontologist was pleased by the discovery of the fossil.
c. Bill was irritated by the loud noises coming from next door.
d. Bill would not be satisfied by halfway measures.
e. Sue was embittered by her experiences with discrimination.
f. Mary was cheered by the French victory.
g. John was worried by my remarks.
h. Harry was puzzled by Sue's curious behavior.
i. Harry was grieved by the court's decision.
j. Sue was bored by her work on lexical entries.
k. Bill was frightened by strange noises.

The same is true of Italian ObjExp verbs that take *avere* 'have' in the active. The following are B&R's examples (1988:(47)):

(47) a. Gianni è disgustato dalla corruzione di questo paese.
Gianni is disgusted by-the corruption of this country
b. Gianni è affascinato da questa prospettiva.
Gianni is fascinated by this prospect

Examples like those in (46)–(47) suggest prima facie that these ObjExp predicates are not unaccusative, contrary to B&R. B&R argue that appearances are misleading. They claim that apparent passives of this sort are adjectival, and not verbal. Although they do not explain why this should make a difference, examples like those in (48) provide a precedent for the claim that adjectival passives are formed from unaccusative verbs. Some of these examples are based on Bresnan (1978:8–9); others were provided by Beth Levin (personal communication).

(48) a. elapsed time
b. departed travelers
c. newly arrived packages
d. newly appeared book
e. capsized boat
f. a fallen leaf
g. collapsed lung
h. blistered paint
i. a failed writer
j. a deceased celebrity
k. a stalled machine
l. well-rested children
m. a risen Christ
n. a stuck window
o. drifted snow
p. a lapsed Catholic

On the other hand, the generalization is far from clear. Many seemingly unaccusative verbs in English do not form adjectival passives, as (49) shows.[17]

(49) a. *an (already) occurred event
b. *(recently) left travelers
c. *(newly) come packages
d. *(recently) grown interest
e. *a (recently) surfaced problem
f. *(recently) descended balloon
g. *(recently) peeled skin

h. *(often) stunk paint
i. *a (recently) succeeded writer
j. *a (recently) died celebrity
k. *a (frequently) paused machine
l. *(well-)slept children [?]
m. *(brightly) glistened paint [?]
n. *a (visibly) trembled orator [?]
o. *the (regularly) twinkled star [?]
p. *the (already) stumbled horse [?]

In chapter 4, I will suggest that (49) is the general case (as expected) and will provide a reason why examples like (48) exist; but for now it is sufficient to note the absence of any general possibility for adjectival passives of unaccusatives.

In other cases, adjectivizing a passive provides no refuge at all from the ban on forming passives from unaccusatives (at least in English). We can see this quite clearly. Consider first the contrasts in (50)–(52). These contrasts were attributed by Perlmutter and Postal (1984:102–3) to unaccusativity in the (b) sentences. The additional examples in (53), also Perlmutter and Postal's (p. 101), received the same analysis.

(50) a. The closet was slid into by Ted.
b. *The closet was slid into by the soap.

(51) a. The desk was sat on by the gorilla.
b. *The desk was sat on by the lamp.

(52) a. The house was leaned against by the athlete.
b. *The house was leaned against by the ladder.

(53) a. *The package was accumulated on by dust.
b. *The room was burst in by the bubble.
c. *The dome was collapsed under by the model.
d. *The bridge was existed under by trolls.
e. *The bed was fallen on by dust.

Pseudopassives do participate in the adjectival passive construction, albeit somewhat colloquially, as seen in (54).[18]

(54) a. a much talked-about solution
b. an often referred-to article
c. a much looked-at painting
d. an often relied-on result

e. a much struggled-against vice
f. a man more sinned-against than sinning

On the other hand, adjectival pseudopassives from the verbs in (50)–(52) have only the sense of the (a) examples, and adjectival pseudopassives from the examples in (53) are entirely impossible.[19]

(55) a. an often slid-into closet [by people, not soap]
b. a much sat-on desk [≠ a cluttered desk]
c. an often leaned-against house [by people, not ladders]

(56) a. *a much accumulated-upon object
b. *an often burst-in cloud chamber
c. *a frequently collapsed-under dome
d. *a recently existed-under bridge
e. *a much fallen-on bed [except if fallen on by, say, actors]

B&R do present two arguments from Italian that are intended to support the adjectival analysis of ObjExp passives (including both *preoccupare*-class and *piacere*-class). These arguments, however, do not hold up to closer scrutiny.

2.3.1 Reduced Relatives

B&R's first argument concerns cliticization in Italian reduced relatives. They note that clitic pronouns may attach themselves to passive participles in reduced relatives—but only if the participle is verbal. Thus, attachment to the verbal participle in (57) is acceptable, but attachment to the adjectival participle in (58) is not.

(57) a. [$_{DP}$ la notizia che *gli* è stata comunicata]
the news that to him was communicated
b. [$_{DP}$ la notizia comunicata*gli*]

(58) a. [$_{DP}$ la notizia che *gli* è ignota]
the news that to him was unknown
b. *[$_{DP}$ la notizia ignota*gli*]

B&R then note that a passive *by*-phrase may not cliticize to a passive participle of an ObjExp verb, as shown in (59). From this, they conclude that the passive of an ObjExp verb is an adjectival passive.

(59) a. (?)[$_{DP}$ la sola persona che *ne* è affascinata]
the only person who by it is fascinated
b. *[$_{DP}$ la sola persona affascinata*ne*]

In fact, the examples in (59) are irrelevant, since a passive *by*-phrase quite generally cannot cliticize to a passive participle functioning as a reduced relative, as shown in (60)–(63). This fact is independent of verb class.

(60) a. [$_{DP}$ la sola persona che ne è stata uccisa]
the only person that by it was killed
b. *la sola persona uccisane

(61) a. [$_{DP}$ la sola persona che ne è stata colpita]
the only person that by it was struck
b. *la sola persona colpitane

(62) a. [$_{DP}$ la sola persona che ne è stata toccata]
the only person that by it was touched
b. *la sola persona toccatane

(63) a. #[$_{DP}$ la sola persona che ne è stata arrestata]
the only person that by it was arrested
b. *la sola persona arrestatane

I know of no explanation for the prohibition seen in (60)–(63). However, the general impossibility of reduced relatives with *ne*-cliticization means that there is no argument from reduced relatives in favor of adjectival status for ObjExp participles.[20]

2.3.2 Passive Auxiliary Choice

B&R's other argument that passives of Italian ObjExp verbs are all adjectival concerns the choice of auxiliary. They note that Italian allows passives with the verb *venire* 'come' replacing *essere* 'be'. They argue that although (64a) "is ambiguous between the adjectival interpretation (the door is in the state of being closed at five) and the verbal interpretation (somewhat marked with present tense, but still possible) 'Somebody closes the door at five'; [(64b)] is not ambiguous, only the verbal interpretation is allowed" (p. 310). From this, they conclude that *venire* is compatible only with verbal passives and hence forms a test for such passives.

(64) a. La porta è chiusa alle cinque. [stative or eventive]
the door is closed at five
b. La porta viene chiusa alle cinque. [only eventive]
the door comes closed at five

Now consider (65a). *Apprezzare* 'appreciate' is a SubjExp predicate: its Experiencer is in surface subject position. By contrast, *affascinare* 'fascinate' and *preoccupare* 'worry' in (65b–c) are ObjExp predicates: their Experiencers are in surface object positions.

(65) a. Gianni viene apprezzato dai suoi concittadini.
Gianni comes appreciated by his fellow citizens
b. *Gianni viene affascinato da questa prospettiva.
Gianni comes fascinated by this perspective
c. *Gianni viene preoccupato da tutti.
Gianni comes worried by everybody

(65a) shows that *venire is* compatible with the SubjExp predicate *apprezzare*. (65b–c) show that *venire* is *not* compatible with ObjExp predicates of the *preoccupare*-group, including *affascinare* and *preoccupare* itself. Based on these observations, B&R conclude that ObjExp predicates yield only adjectival passives.

Once again, however, I believe that the situation has been misanalyzed. B&R are correct in claiming that *venire* is compatible only with "eventive" predicates. Furthermore, adjectival passives are noneventive. In fact, adjectives are in general quite impossible with *venire*. Nonetheless, the impossibility of *venire* does not diagnose adjectival passives; it merely diagnoses noneventiveness, a property shared by adjectival passives, some verbal passives, and other forms as well.[21] Thus, as Sandro Zucchi (personal communication) points out, the SubjExp predicate in (65a) is acceptable with *venire* only if appreciating Gianni is somehow an event or, better, an action. For example, (65a) suggests that *signs* of appreciation are being given, for example, a cheer, a slap on the back, a broad smile, or some display of this sort. Likewise, *venire*-passives with ObjExp predicates become progressively more acceptable as the predicate becomes more and more eventive. Indeed, most of my informants find (66a–c) (minimally modified from B&R's examples) to be quite acceptable.

(66) a. (?)Il publico venne affascinato dalla conclusione di quel
the public came fascinated by the conclusion of that
concerto.
concert(o)
b. Gianni venne spaventato da questa prospettiva alle cinque.
Gianni came frightened by this perspective at five
c. ?Gianni venne terrificato da questa prospettiva (alle cinque).
Gianni came terrified by this perspective at five[22]

(66a) uses the same verb as (65b), but invites a more eventive interpretation. (Present versus past tense also seems to make a difference, for some reason.) Additionally, Denis Delfitto (personal communication) notes that examples like those in (66) become perfect if an adverb such as *spesso* 'often' is added. Thus, neither of B&R's two arguments in support of adjectival status for these Italian passives can be maintained.

2.3.3 Interim Conclusions

For Italian, I have defused B&R's arguments that all ObjExp passives are adjectival. I am not aware of arguments from Italian that press the stronger claim—that these passives can be verbal. In English and Dutch, however, such arguments are available. These arguments are of interest for two related reasons.

First, in other respects English and Dutch ObjExp verbs do not look too different from their Italian counterparts. Italian, English, and Dutch ObjExp verbs display similar binding phenomena (considered in section 2.5.1). Italian and Dutch verbs show a similar distribution of auxiliaries (see section 2.5.2). Other facts considered by B&R and in this study are similar.

Second, if there are universal linking patterns, we do not expect semantically similar ObjExp verbs in Italian, English, and Dutch to differ systematically in unaccusativity. None of these languages produces verbal passives from unaccusatives. Thus, a demonstration of unequivocally verbal behavior in the ObjExp passives of any of these languages has significance for the analysis of ObjExp predicates in all of these languages. In the next sections, we will look first at ObjExp passives in English and then briefly at Dutch, arguing in each case that these passives can be verbal.

2.3.4 English: Stativity and Passives

In this section, I draw on work by Grimshaw (1987, 1991:114ff.), except that I reach conclusions quite different from hers. Grimshaw argues in favor of B&R's proposal concerning the passive of ObjExp predicates. In support of this proposal, she claims that English ObjExp passives are always stative. Since stativity is a property of the adjectival passive, she takes this observation as evidence that B&R's adjectival analysis of Experiencer predicate passives is correct. The argument is not conclusive, of course, since the data are merely consistent with the analysis; they do not force it. In fact, there are also empirical problems. I believe that the relevant data, when considered more carefully, lead to a conclusion opposite from Grimshaw's.

Grimshaw's premise is correct: adjectival passives are stative. This can be shown with the aid of adverbs like *much* and *very*. These adverbs, though restricted in distribution, can modify an adjectival passive, but not a verbal one.[23]

(67) a. This idea was much discussed in the '70s.
b. The invasion was much condemned by the press.
c. John is much maligned.
d. The much awaited performance lived up to expectations.
e. Our much battered car finally made it over the hill.
f. *We much discussed this idea in the '70s.
g. This idea was (*much) considered important in the '70s.

(68) a. This edition is very abridged.
b. The circle was very elongated.
c. His reply was very balanced.
d. The tree limb was very bloated.
e. Sue was very hurried.
f. France is a very industrialized country.
g. *The censors very abridged this edition.
h. This idea was (*very) considered important in the '70s.

Progressive aspect is generally incompatible with stative predicates. As predicted, progressive aspect is incompatible with a passive form modified by *very* or by *much* (as (69) shows). These data can be explained if adjectival status for a passive entails stativity.[24]

(69) a. The book was still being (*very) abridged when the order came through to publish it in its entirety.
b. This idea was being (*much) talked about in the '70s.

Now let us turn to data involving ObjExp predicates. It is clear enough that some ObjExp predicates are often most comfortable as statives, even in the active. Thus, for example, the ObjExp verb *depress* resists the progressive form with the meaning of iterated action, and is odd in the punctual use of the simple past tense. This oddness is, unsurprisingly, recapitulated in the passive. The question marks in (71) cannot be taken as evidence that the passive of *depress* is adjectival, given the comparable question marks for (70).

(70) a. ??Odd noises were continually depressing Sue.
b. ??Bill was sitting around happy as a lark, when an unexpected groan from the next room suddenly depressed him.

(71) a. ??Sue was continually being depressed by odd noises.
b. ??Bill was sitting around happy as a lark, when suddenly he was depressed by an unexpected groan from the next room.

Now consider ObjExp predicates that are not exclusively stative. *Scare* is quite acceptable in the progressive or punctual past. Crucially, there is no problem with the passive forms.

(72) a. Odd noises were continually scaring Sue.
b. Bill was sitting around calm as could be, when an unexpected groan from the next room suddenly scared him.

(73) a. Sue was continually being scared by odd noises.
b. Bill was sitting around calm as could be, when he was suddenly scared by an unexpected groan from the next room.

Like *scare* are *terrify*, *alarm*, *startle*, *dismay*, *shock*, and *surprise*, among others. Like *depress* are *worry* and *bore*. It is quite likely that the relevant distinction has to do with the nature of the onset of the emotion referenced by the ObjExp verb. I conjecture that emotions that typically come on suddenly and consciously (e.g., frights and surprises) allow the iterative progressive, whereas emotions that typically grow imperceptibly (e.g., boredom and depression) do not, but I have not investigated these matters carefully. The crucial point is that the actives and the passives do not contrast in any relevant fashion.

Grimshaw (1991:114) presents a rather different emblematic example of the progressive in ObjExp verbs. I accept the star on (74b).

(74) a. The situation was depressing Mary.
b. *Mary was being depressed by the situation.

The present discussion invites new questions about these examples. Given (70)–(71), what is surprising is not the *unacceptability* of the passive (74b), but the *acceptability* of the active (74a). The acceptability of (74a) recalls the surprising acceptability of the progressive with certain SubjExp statives.

(75) a. Karen is finally understanding this proof.
b. Donald is finding your accusations ludicrous.
c. I think Bill is really liking this performance.
d. Sue is truly hating the sea-urchin sushi.
e. Harry is clearly fearing an outbreak of the flu.[25]

Examples (75a–c) are modeled on examples presented by Baker (1989: 489, (191)–(193)), who notes that predicates like these function elsewhere as statives. He remarks further that the progressive-aspect predicates found here

> appear to assert the existence of a judgment of some sort concerning an individual entity or a set of entities ... imply[ing] that the judgment is an intermediate one based on only part of the available evidence. Sentence [(75a)] would typically be used if Karen was only partly done going through the proof, [(75c)] would be appropriate at an intermediate point in the performance, and [(75b)] would be used if Donald had heard only some of the accusations. (pp. 489–90)

Clearly, this is a use of the progressive distinct from (though related to) the "iterative" use seen in (70)–(73). (74a) shows this use, not the "iterative" one. If someone says that "the situation is depressing Mary," we naturally infer that this person is making a judgment (in this context; see below) about some situation that has not played itself out at the time of the utterance.

Now none of the verbs in (75) is unaccusative in B&R's analysis. In particular, verbs of this sort (B&R's *temere*-class) are said to yield verbal passives, and fail B&R's other tests for unaccusativity. Nonetheless, the passive progressive of these verbs in English yields judgments ranging from odd to unacceptable.

(76) a. ??This proof is finally being understood by Karen.
b. *Your accusations are being found ludicrous by Donald.
c. *I think this performance is really being liked by Bill.
d. *The sea-urchin sushi is truly being hated by Sue.
e. *An outbreak of the flu is clearly being feared by Harry.

Nonprogressive passives are stilted, but unproblematic.

(77) a. This proof is understood by Karen.
b. Your accusations were found ludicrous by Donald.
c. I think this performance was really liked by Bill.
d. The sea-urchin sushi was truly hated by Sue.
e. An outbreak of the flu is feared by Harry.

I suggest that the data in (76) and (74a) are of a piece: progressive forms of stative predicates require a particular interpretation that is for some reason incompatible with the passive. Crucially, unaccusativity is not diagnosed.[26] If my interpretation of the data in (70)–(73) is right, then just the opposite is true: we have an argument *against* the unaccusativity of

ObjExp predicates, since they form fully verbal passives that, under the right conditions, also participate in the progressive.

Other contrasts make the same point concerning Grimshaw's claim. Assuming that the availability of *much*, as in (67), can be used as a test for adjectival passives, let us apply it to ObjExp passives. It turns out that the passive of an ObjExp verb like *scare* or *frighten* is incompatible with the progressive aspect only when it is modified by *much* (or similar adverbs). When not modified by *much*, these verbs are acceptable in the progressive. This contrast is expected if only the disambiguating power of an adverb like *much* can force ObjExp passives to be adjectival. Thus, (78a) *does* show an adjectival passive derived from *frighten*, but this form differs in a predictable manner from the verbal passive seen in (78b).

(78) a. Bill was (much) frightened by my remark.
b. In those days, Bill was often being (*much) frightened by one thing or another when I would come home from work.

(79) a. Sue was (extremely) annoyed by Bill's behavior.
b. In those days, Sue was often being (*extremely) annoyed by Bill's behavior.[27]

Finally, consider cases where the true adjectival passive takes an idiosyncratic preposition. Here, the contrast between the uncontroversial adjective and the passive with the *by*-phrase is sharp and robust.[28,29]

(80) a. Sue was continually being scared by sudden noises.
b. *Sue was continually being scared of sudden noises.

(81) a. Bill was often being enraged by totally innocent remarks.
b. *Bill was often being enraged at totally innocent remarks.

(82) a. Sue was continually being annoyed by mysterious sounds from the cellar.
b. *Sue was continually being annoyed with mysterious sounds from the cellar.

(83) a. John was always being deeply impressed by things that left the rest of us cold.
b. *John was always being deeply impressed with things that left the rest of us cold.

If the *-ed* marking is a sign of some sort of passive, then the (b) examples here show true adjectival passives. These adjectival passives do not behave at all like the verbal passives seen in the (a) examples.

Thus, the types of facts raised by Grimshaw not only undermine B&R's arguments *for* the adjectival analysis of ObjExp passives, but also actively argue *against* such an analysis.

2.3.5 Raising in Dutch

In Dutch, the phenomenon of V-raising (henceforth *VR*) shows quite straightforwardly that Dutch ObjExp passives may be verbal. My discussion of VR is taken from Den Besten 1989:196ff., as are most of the examples.[30] I am grateful to René Mulder (personal communication) for bringing this argument to my attention, and for supplying the crucial punchline concerning Experiencer verbs.

VR is a phenomenon that reverses the expected order of a matrix verb and an embedded verb. (I will limit myself to embedded *dat*-clauses, in order to avoid the complications of matrix verb-second word order.) VR is obligatory in some contexts, but is optional in the perfect tense. In the perfect, the participle may invert with the auxiliaries *hebben* 'have' and *zijn* 'be'.

(84) a. dat hij gelachen heeft [no VR]
that he laughed has
'that he has laughed'
b. dat hij heeft gelachen

(85) a. dat zij gearriveerd is
that she arrived is
'that she has arrived'
b. dat zij is gearriveerd

(86a–b) show that VR is also optional in passives with auxiliary *worden* 'become'. (87a–b) show that VR (unlike the choice of *venire* or *essere* in Italian) is insensitive to stativity.

(86) a. dat hem de P.C. Hooft-prijs toegekend werd
that to him the P.C. Hooft prize awarded was
'that the P.C. Hooft prize was awarded to him'
b. dat hem de P.C. Hooft-prijs werd toegekend

(87) a. dat Jan zijn vader nooit echt gekend heeft
that Jan his father never really known has
'that Jan has never really known his father'
b. dat Jan zijn vader nooit echt heeft gekend

Finally, nothing analogous to VR (again, regardless of stativity) applies to adjectives. (88) and (89) were supplied by René Mulder. The adjective *verliefd* in (90) (from Den Besten 1989:199, (82)) is participial in form, but nonetheless does not allow VR.

(88) a. dat Jan de hele dag druk bezig is
that Jan the whole day very busy is
'that Jan is very busy the whole day'
b. *dat Jan de hele dag druk is bezig

(89) a. dat Jan de hele dag boos was
that Jan the whole day angry was
'that Jan was angry the whole day'
b. *dat Jan de hele dag was boos

(90) a. dat hij op haar verliefd is
that he with her in love is
'that he is in love with her'
b. *dat hij op haar is verliefd

Den Besten argues that there is a systematic difference between verbal and adjectival passives in Dutch, using VR as one of a number of crucial tests. Verbal and adjectival passives differ in Dutch (as in English) in a variety of ways. Only verbal passives allow a nonstative interpretation. Only verbal passives allow a *by*-phrase (using the preposition *door*).[31] Finally, only verbal passives use the auxiliary *worden* 'become'. This auxiliary, however, is normally deleted in the perfect. Thus, Dutch speakers generally accept only the version of (91) without the participle *geworden*.

(91) Zij is gisteren gearresteerd (%geworden).
she is yesterday arrested become
'She has been (or 'was') arrested yesterday.'

As a consequence, (92a) is ambiguous between a verbal, nonstative, perfect reading (when the hearer assumes a deleted *geworden*) and an adjectival, stative, present tense reading (when the hearer does not assume deleted *geworden*). The ambiguity is resolved in favor of a verbal reading by the addition of a *door*-phrase, as in (92b).

(92) a. Dit zwembad is gesloten. [ambiguous]
'This swimming pool is closed.' [no deleted *worden*]
'This swimming pool has been/was closed.' [assuming deleted *worden*]

b. Dit zwembad is door de gemeente
this swimming pool is by the authorities
gesloten. [unambiguous]
closed
'This swimming pool has been/was closed by the authorities.'

(93) (supplied by René Mulder) without *jarenlang* 'for years' is also ambiguous between a verbal, nonstative, past tense reading (when the hearer assumes a deleted *geworden*) and an adjectival, stative, present tense reading (when the hearer does not assume deleted *geworden*). The inclusion of *jarenlang* eliminates the stative possibility, leaving only the verbal passive.

(93) dat Jan (jarenlang) getrouwd is
that Jan for-years married is
'that Jan has been married (for years)'
'that Jan is married (*for years)'

Crucially, if VR reverses the order of *getrouwd* and *is* (as well as the deleted *geworden*, presumably), only the verbal, nonstative, past tense reading is available.

(94) dat Jan (jarenlang) is getrouwd

Likewise, Den Besten (1989:199) considers (95)

(95) dat hij er niet van overtuigd is
that he it not of { convinced is / been-convinced has }

and notes,

This example is ambiguous. Either it is a *zijn*-passive or it is a *worden*-passive, and then it can be related to [(96)] . . . :

(96) [%]dat hij er niet van overtuigd is geworden[32]
that he it not of convinced is become
[i.e., convinced has been]

Under its stative reading, [(96)] does not allow an agent phrase, nor does it allow an application of Verb Raising, most probably because the past participle of a *zijn*-passive is an adjective and not a verb. Under its dynamic reading, however, [(96)] allows both an agent phrase and an application of Verb Raising. Compare [(97)]:

(97) dat hij er niet door zijn broer van is overtuigd
that he it not by his brother of is convinced

I have reproduced here a well-known argument from Dutch grammar in favor of the verbal status of the past participle in *worden*-passives as well as in favor of the adjectival status of the "past participle" in *zijn*-passives.

Now let us turn to the passives of ObjExp verbs. Taking my lead from B&R, I will stick for now to ObjExp verbs that take the auxiliary *hebben* 'have', returning to ObjExp verbs with *zijn* in section 2.5.2. As in English, verbal passives from certain ObjExp verbs are slightly reduced in acceptability for some speakers. This is reported to be the case for *irriteeren* 'irritate' and *ergern* 'annoy' in the examples below, though not for *boeien* 'fascinate'. Nonetheless, even the worse passives are reported to be "pretty much acceptable." Furthermore, both the (a) and (b) examples contain a *door*-phrase, which may already force a verbal reading on the passive. Additionally, the (b) examples show VR, which quite clearly forces a verbal reading, as we have seen.

(98) a. (?)dat ik door dat boek nogal geirriteerd werd
that I by that book rather irritated became
b. (?)dat ik door dat boek nogal werd geirriteerd
'that I got rather irritated by that book'

(99) a. (?)dat ik door die opmerking nogal geergerd werd
that I by that remark rather annoyed became
b. (?)dat ik door die opmerking nogal werd geergerd
'that I got rather annoyed by that remark'

(100) a. dat ik door het college geboeid werd
that I by the classes fascinated became
b. dat ik door het college werd geboeid
'that I got fascinated by the classes'

None of these examples yield the sharp judgments of unacceptability found when adjectives are subjected to VR in (88)–(90). Nor do they yield the types of judgments reported for passives of unaccusatives discussed by Perlmutter (1978) and Perlmutter and Zaenen (1984:190–91).

(101) a. *Er wordt (door veel patienten) in dat ziekenhuis
there were by many patients in that hospital
gestorven.
died
b. *Er werd door veel toeristen in de hotelbrand gebleven.
there were by many tourists in the hotel fire remained

I conclude that the passives of Dutch ObjExp verbs do not have to be adjectival. Since Dutch does not form verbal passives from unaccusatives, it follows that Dutch ObjExp verbs are not unaccusative.

2.4 Athematic Subjects: Other Discussion

We have seen that the analysis of ObjExp passives as adjectival is dubious in Italian and incorrect for English and Dutch. If ObjExp verbs can form verbal passives in defiance of standard properties of verbs with athematic subjects, we must ask what, if any, other evidence might bear on the matter.

2.4.1 Free Inversion

One of the best-known and best-studied properties of unaccusative verbs in Italian cannot serve as a test for the unaccusativity of ObjExp verbs. We expect the underlying object of an unaccusative verb in Italian to be able to remain in object position at S-Structure. Free inversion with ObjExp verbs is impossible, however, as B&R note.

(102) *Preoccupano le tue idee Gianni.
worry your ideas Gianni

B&R relate the impossibility of (102) to a general condition (p. 340) requiring that noneventive clauses "involve a nonvacuous predication at S-structure (with a referential subject)" and note that the same word order, *verb Theme Experiencer*, is impossible even with SubjExp predicates.

(103) *Teme le tue idee Gianni.
worry your ideas Gianni

B&R are correct in claiming that (102) and (103) can fall under the same generalization if the unaccusative analysis for (102) is correct. Indeed, observations that point to a generalization quite close to B&R's have been made independently by Diesing (1989) and by Kratzer (1989) on the basis of rather different German and English data. It is important to note, however, that the ungrammaticality of (102), coupled with the unexpected possibility of verbal passivization just observed, remove from discussion two of the better-established diagnostics for unaccusativity. The facts in (102)–(103) do not intrinsically cast doubt on the analysis as the passive facts do, but they do make unavailable data that might have significantly supported the analysis.

2.4.2 Arbitrary pro

B&R present one other argument directed at the athematic status of the subject of ObjExp verbs. This argument turns out to be spurious. The details of the refutation are included here because of their intrinsic interest, although I view the athematic proposal as sufficiently refuted at this point. This subsection may thus be regarded as an appendix, which may be skipped without cost to the general discussion.

Developing unpublished work by Alfredo Hurtado (and following Jaeggli (1986a)), B&R (p. 299) use as a diagnostic of unaccusativity a "kind of arbitrary interpretation [of third person plural pro] in which the plural specification does not imply semantic plurality: there is simply no commitment as to the real number of the argument in question." As a consequence, the following dialogue is felicitous, despite the continuation of plural pro with singular *Gianni* (B&R's examples (20)–(21)).

(104) pro ti stanno chiamando. Deve essere Gianni.
they you are-3pl calling (it) must be Gianni
'Somebody is calling you. It must be Gianni.'

B&R make the claim in (105).

(105) "[*A*]*rb* interpretation can be assigned to deep subject *pro*'s only; it is incompatible with unaccusative structure." (p. 300)

This claim is illustrated by the contrast between the unergative and transitive examples in (106) and the unaccusative examples in (107) (B&R's examples (22)–(23)). All the relevant verbs are third person plural.

(106) a. pro hanno telefonato a casa mia.
'Somebody telephoned my place.'
b. pro mi hanno mandato un telegramma.
'Somebody sent me a telegram.'
c. pro hanno arrestato Gianni.
'Somebody arrested Gianni.'
d. pro hanno visto Gianni in giardino.
'Somebody saw Gianni in the garden.'

(107) a. *pro sono arrivati a casa mia.
'Somebody arrived at my place.'
b. *pro mi sono sembrati matti.
'Somebody seemed to me crazy.'

c. *pro sono stati arrestati dalla polizia.
'Somebody has been arrested by the police.'
d. *pro sono stati visti in giardino.
'Somebody has been seen in the garden.'

B&R next note the impossibility of the relevant interpretation for third person plural subjects of ObjExp verbs and conclude that these subjects are underlying objects, in keeping with the unaccusative analysis. ((108a–c) are B&R's (24b), (26b), and (25c), respectively.)

(108) a. *Evidentemente, in questo paese per anni pro
evidently in this country for years
hanno preoccupato il governo.
worried the government
'Evidently, in this country somebody worried the government for years.'
b. *pro hanno colpito il giornalista per la gentilezza.
'Somebody struck the journalist with his kindness.'
c. ??Qui pro hanno sempre entusiasmato/commosso gli americani.
'Here, someone always excited/moved the American people.'

But are the diagnostic and the generalization correct? First, a sharp distinction must be made between what B&R call the "existential" use of the third person plural and the "generic" use (alluded to in their footnote 6). Once this is done, a rather different picture of the facts seems to emerge.[33]

Let us consider the "existential" usage. The term *corporate* is perhaps more illuminating than "existential" for the first use of the third person plural. The corporate usage can be seen in English examples like (109a–g) and their Italian equivalents (110a–g).

(109) a. They robbed Mrs. Johnson.
b. ?They rob someone different every night.
c. They're making us fill out our income tax forms early this year.
d. They came for Charley.
e. They accepted our check at the supermarket.
f. They punched me at the supermarket.
g. They sell cigarettes on Melrose. (Jaeggli 1986a)

(110) a. Hanno rapinato la Signora Rossi.
b. Rapinano una persona diversa tutte le sere.
c. Quest'anno ci fanno fare la dichiarazione dei redditi prima.

d. Sono venuti a cercare Gianni.
e. Al negozio hanno accettato il nostro assegno.
f. Al mercato mi hanno malmenato.
g. Al mercato vendono sigarette.

The English plural pronoun in (109) seems to pick out some socially designated group of people, prototypically governments, bosses, criminals, or shopkeepers. As B&R note, the referent of the pronoun need not be plural: the accepter in (109e) could be a single person. This single person must, however, be acting as the representative of some larger group. The parallel Italian examples (including (106)) apparently have the same flavor, making the "somebody" of B&R's glosses somewhat misleading.

Now consider again the contrast in (106)–(107) with the corporate reading pointed to by the glosses. The data really admit two descriptions: the verbs in (106) differ from those in (107) in unaccusativity, but they also differ in agentivity.[34] In many cases, the two notions coincide: unaccusative verbs are usually nonagentive, and many unergative or transitive verbs are agentive. Nonetheless, as noted in section 2.1, there are cases where they do not coincide. Thus, (111) must be considered as a possible alternative to (105).

(111) "Corporate" interpretation can be assigned to agentive third person pronouns (pro in Italian) only; it is incompatible with nonagentive θ-roles.

In fact, the formulation in (111) appears to be correct, and (105) false. First consider nonagentive underlying subjects. The claim in (105) predicts that these should allow the corporate reading, all things being equal. By contrast, (111) predicts that they should not. In fact, they do not. Contrast (109f) with (112). (109f) is felicitous if I've been banned from the supermarket, and the supermarket's hired guard punched me. (112) is not felicitous if I punched him.[35]

(112) a. *They received a punch in the nose at the supermarket.
b. *Al mercato hanno preso un pugno sul naso.

(113) a. *They received a phone call yesterday.
b. *Ieri hanno ricevuto una telefonata.

Note the auxiliary *avere* in (112)–(113). The main verbs here are not unaccusative.

Next consider agentive underlying objects. As noted above, certain verbs of motion are unaccusatives even when used agentively. Theory (105) predicts straightforwardly that corporate third person plural pronouns should be impossible with such verbs. All things being equal, theory (111) predicts that they should be possible. Once again, theory (111) seems to be correct. Corporate third person plural pronouns seem to be completely possible in these environments, under the circumstances indicated in square brackets.[36]

(114) a. Sono venuti a riparare il lavandino.
'Somebody came to fix the sink.'
[One repairman came from the shop.]
b. Sono venuti a cercare Gianni.
'Somebody came looking for Gianni.'
[One policeman came to the door.]
c. Sono andati a cercarlo a casa di sua madre.
'Somebody went looking for him at his mother's house.'
[One person went.][37]

If corporate *they* diagnoses *agency*, not unaccusativity, in both English and Italian, its impossibility as the subject of ObjExp predicates tells us little about the underlying grammatical relations of these verbs. It is merely sufficient to note that the subject of ObjExp predicates is typically not an Agent, and (111) predicts that corporate pro will be impossible in examples like (108a–c).[38]

The other use of third person plural relevant to B&R is a "generic" use. This appears to have a different distribution than the corporate use, but similarly fails to diagnose unaccusatives. Relevant examples are as follows:

(115) a. In Japan, they drive on the left.
b. In America, they're required to fill out income tax forms every year.
c. In Canada, they wilt if the temperature goes above 60°F.

(116) a. In Giappone, viaggiano sulla sinistra.
b. In America, sono ?costretti/obbligati a fare la dichiarazione dei redditi tutti gli anni.[39]
c. In Canada, ?avvizziscono/?soffocano quando la temperatura supera i 15 gradi.

Plainly, deep objects can be third person plural generics, as the (b) and (c) examples of (115)–(116) illustrate. A similar observation is made by Cinque (1988:545).

In fact, it is likely that the correct characterization of third person plural generics is once again thematic. B&R note (somewhat indirectly) that this interpretation is available for the Experiencer subject of SubjExp predicates.[40]

(117) Evidentemente, in questo paese per anni pro hanno temuto il terremoto.
'Evidently, in this country people feared the earthquake for years.'

By contrast, periphrastic counterparts to sentences with ObjExp verbs resist generic third person plural pronouns.

(118) a. *In France, they worry you.
b. *In France, they make you worried.
c. *In Francia, ti preoccupano.
d. *In Francia, ti rendono preoccupato.

If we now examine the good examples of third person plural generics, they include Agents (as in (115a)), Patients (as in (115b–c)), and Experiencers, but exclude subjects of *make* and *please* (which B&R would probably call Causer and Theme, but which we will shortly identify as both being Causer arguments) and certain direct object third person plural generics (**In totalitarian countries, they are known by the police*).

Apparently, third person plural generic uses of pro involve arguments that are affected by the event in which they occur, either by being changed or by being conscious participants in the event. (This generalization is similar to the generalizations concerning direct object pro discussed by Rizzi (1986a).) In any case, it is clear that the generalization does not single out grammatical functions like subject and object, but is semantic in nature. Third person plural pronouns thus provide no argument for the unaccusativity of ObjExp predicates.

2.5 The Relation between Subject and Object Position

2.5.1 "Backward Binding" and ObjExp Predicates

B&R's structure for the ObjExp verbs does not merely involve an athematic subject position; it involves a reversal of c-command relations among the arguments between D-Structure and S-Structure, as seen in (44), repeated here.

(119) Theme_i $[_{VP}[_{V'}$ V $e_i]$ Exper]

B&R argue that the reversal of c-command relations provides an explanation for the well-known binding peculiarities of ObjExp verbs: anaphors contained within the subject of such verbs may be bound by the object (Akatsuka 1976, Giorgi 1984, Pesetsky 1987a), in violation of the usual c-command condition on bound anaphora.

(120) a. Questi pettegolezzi su di sè$_i$ preoccupano Gianni$_i$ più di ogni altra cosa. (B&R (57a))
b. These rumors about himself$_i$ worry Gianni$_i$ more than anything else.

(121) a. I propri$_i$ sostenitori preoccupano Gianni$_i$.
'His own supporters worry Gianni.'
b. Each other's supporters worried Freud and Jung.

(122) Each other$_i$'s remarks annoyed John and Mary.

If the surface subject in these examples is c-commanded by the Experiencer object at D-Structure, then D-Structure application of Principle A of the binding theory, or any one of a variety of plausible mechanisms (e.g., reconstruction or Barss's (1986) Chain Binding) can explain the unexpected grammaticality of these examples.

I will ultimately propose an account of these phenomena very close to B&R's. Indeed, I will adopt their idea that Principle A of the binding theory may be satisfied earlier than S-Structure or LF, and I will adopt an analysis in which movement applies to the non-Experiencer in a way not too different from B&R's proposal (despite the fact that the subject will be argued to be thematic, rather than athematic).

Nonetheless, here too there are complications and subtleties that do not follow naturally from B&R's analysis. The phenomenon seen in (120)–(122) for English extends beyond the domain of ObjExp predicates to constructions that clearly do not involve an athematic subject. In particular, periphrastic causatives show what looks like the same phenomenon.[41]

(123) a. ?Questi pettegolezzi su di sè$_i$ hanno reso Gianni$_i$ felice.
'These rumors about himself have made Gianni happy.'
b. Questi pettegolezzi su di sè$_i$ hanno persuaso Gianni$_i$ a partire.
'These rumors about himself persuaded Gianni to leave.'

(124) a. Each other's remarks made John and Mary angry.
b. Pictures of each other make us happy.

c. These stories about herself made Mary nervous.
d. Pictures of himself give John the creeps.

(125) a. Each other's criticisms forced John and Mary to confront their problems.
b. Pictures of each other caused John and Mary to start crying.
c. Those rumors about himself made John behave more carefully.
d. Pictures of herself used to make Sue blush.

(126) a. ?Each other's stupid remarks eventually killed John and Mary.
b. ?Each other's criticisms harmed John and Mary.
c. ?Those pictures of himself ultimately destroyed Bill.
d. ?Rumors about herself always plunge Mary into a deep depression.

The examples in (126) contradict usual descriptions of binding possibilities, but should be compared with similar agentive examples, which are clearly worse.

(127) a. *Each other's stupid friends eventually killed John and Mary.
b. *Each other's parents harmed John and Mary.
c. *Each other's teachers insulted John and Mary.
d. *Each other's swimming coaches plunged John and Mary into the pool.

Now let us look carefully at (123a) and (124a–d). If we attempt to explain the binding possibilities in these examples in the way B&R explain the parallel ObjExp verb examples, we soon run into trouble. Suppose the structure of these examples is unaccusative in a way that will explain the binding problems in a simple manner.

(128) [Each other$_i$'s remarks]$_j$ [made e$_j$ [John and Mary]$_i$ angry].

The question of Case assignment immediately arises. B&R face the problem in structures like (119) of explaining why the first object (the "Theme") must move to subject position, whereas the second object stays in place. If the verb assigns only structural accusative Case, then we might expect either (1) both objects to remain in situ (if two accusative Cases can be assigned), or (2) one or the other of the two objects, freely chosen, to move (if only one accusative Case can be assigned). In either instance, we also have a violation of Burzio's Generalization to contend with: if ObjExp verbs are unaccusative, we expect problems in accusative Case assignment.

B&R opt for the only solution available, given their *LGB*-based view of Case theory (which I will also accept in this book). They restrict Burzio's Generalization to structural Case. By excluding inherent Case from the jurisdiction of Burzio's Generalization, B&R leave open the possibility that an unaccusative verb may assign *inherent* accusative Case. Inherent Case is defined as Case linked to θ-role assignment (Chomsky 1980, 1986b, Pesetsky 1982). It is for this reason that ObjExp verbs are allowed to specify that they assign inherent accusative Case to their Experiencer argument.

But now turn to the (flat) structure in (128). By parity of reasoning, we must assume that *make* is assigning inherent accusative Case to *John and Mary;* structural accusative Case would violate Burzio's Generalization, and would in any case lead to the wrong predictions about movement sketched above. But *make* does not necessarily assign any θ-role to *John and Mary*, even when backward binding is found. In (129), for example, *John and Mary* receives its θ-role from *angry* in the lowest clause.

(129) [Each other$_i$'s remarks]$_j$ [made e$_j$ [John and Mary]$_i$ seem t$_i$ to be angry].

Suppose that *John and Mary angry* in (128) forms a small clause in the sort of syntactic structure B&R would probably assume, as in (130).

(130) [Each other$_i$'s remarks]$_j$ [made e$_j$ [John and Mary$_i$ angry]].

In this structure, *John and Mary* does not c-command *each other's remarks* even at D-Structure. Thus, if the small clause analysis is correct and a c-command condition governs anaphoric binding, there is an additional reason for rejecting a B&R-like solution to the problem of (123a) and (124).

Now consider the Japanese constructions that correspond to English sentences with ObjExp predicates. Akatsuka (1969, 1976) notes facts very similar to those just discussed.[42] Examples (131a–c) are hers; (131d) is due to Hoji and Saito (1983).

(131) a. [*Zibun*$_i$-ga gan kamo sirenai koto]-ga *Hirosi*$_i$-o
refl-NOM cancer may have fact-NOM Hiroshi-ACC
nayam-ase-ta.[43]
worry-CAUSE-past
'The fact that himself$_i$ may have cancer worried Hiroshi$_i$.'

b. [*Zibun*$_i$-ni-mo yotugi-ga umareta koto]-ga *Hideyosi*$_i$-o
refl-DAT-prt heir-NOM was born fact-NOM Hideyoshi-ACC
itaku yorokob-ase-ta.
very pleased-CAUSE-past
'The fact that an heir was born to himself$_i$ pleased Hideyoshi$_i$ very much.'

c. [Koibito-ga *zibun*$_i$-o uragitta koto]-ga *Hirosi*$_i$-o
girl friend-NOM refl-ACC betrayed fact-NOM Hiroshi-ACC
hungai-s-sase-ta.
resentment-do-CAUSE-past
'The fact that his girl friend had betrayed himself$_i$ infuriated Hiroshi$_i$.'

d. [John-ga *zibun*$_i$-no kuruma-o kowasita koto]-ga
John-NOM refl-GEN car-ACC broke fact-NOM
Mary$_i$-o odorok-ase-ta.
Mary-ACC surprised-make-past
'The fact that John broke herself$_i$'s car surprised Mary$_i$.'

The antecedent of *zibun*, like the antecedent of an English reflexive, must normally occupy a c-commanding position.

(132) *[*John*$_i$-no hahaoya-ga] *zibun*$_i$-o aisiteiru.
John-GEN mother-NOM himself-ACC loves

The first thing to note is that the matrix verbs of (131), though given simple translations like 'worry', 'please', and 'infuriate', are actually morphologically complex causative verbs (as the glosses make clear). If one accepts the analysis of Japanese causatives first proposed by Kuroda (1965), under which they are syntactically complex forms that have undergone VR, the examples in (131) are already more like the English periphrastic examples in (124) than the single-verb examples in (120)–(122). This point will become more important in section 3.4. Although apparently most Japanese translations of English or Italian ObjExp verbs are causatives of some sort, there are idiomatic uses of simplex verbs that more closely resemble the English ObjExp class. The following examples are attributed by Akatsuka (1976:97) to S.-Y. Kuroda (personal communication).[44]

(133) a. *Zibun*$_i$-ga Marii-ni karakawareta koto]-ga *Zyon*$_i$-o
refl-NOM Mary-by made fun of fact-NOM John-ACC
zetuboo-e oiyatta.
despair-to drove
'That himself$_i$ was made fun of by Mary drove John$_i$ to despair.'

b. Marii-ga *zibun*$_i$-o hinan sita koto]-ga *Zyon*$_i$-o
Mary-NOM refl-ACC accused fact-NOM John-ACC
utinomesita.
bowled over
'That Mary accused himself$_i$ bowled John$_i$ over.'

Of interest here is the fact that, although the Japanese data resemble the better-known English and Italian data, the Japanese verbs fail an important and heretofore reliable test for unaccusativity developed by Miyagawa (1989). Miyagawa looks at "floated" phrases consisting of a numeric quantifier and a classifier (henceforth *NQ*s). He shows that they must be syntactically quite close to the noun phrase with which they are associated. (This association is indicated by italic type in the examples below.) Miyagawa argues that mutual c-command is the relevant relation. On the assumption that Japanese has the sort of articulated phrase structure found in standard analyses of English, the examples in (135) show a failure of mutual c-command between the italicized DP and the italicized NQ.

(134) Taroo-ga *hon*-o *3-satu* kat-ta.
Taro-NOM book-ACC 3-cl buy-past
'Taro bought three books.'

(135) a. *[*Tomodati*-no kuruma]-ga *2-ri* nusum-are-ta.
friend-GEN car-NOM 2-cl steal-PASS-past

b. **Gakusei*-ga hon-o *2-ri* kat-ta.
student-NOM book-ACC 2-cl buy-past

c. ?**Kodomo*-ga [kono kagi]-de *2-ri* doa-o ake-ta.
child-NOM this key-by 2-cl door-ACC open-past

d. ?**Gakusei*-ga [zibun-no kane]-de *2-ri* denwa-si-ta.
student-NOM self-GEN money-with 2-cl telephone-past

Given (135), the following data are at first sight quite surprising:

(136) a. *Doa*-ga [kono kagi]-de *2-tu* ai-ta.
door-NOM this key-by 2-cl open-past
'Two doors were opened by this key.'

b. Kinoo, *tekihei*-ga [ano hasi]-o *2-3-nin*
yesterday enemy soldier-NOM that bridge-ACC 2-3-cl
watat-ta.
cross-past
'Yesterday two or three enemy soldiers crossed that bridge.'

c. *Gakusei*-ga ofisu-ni *2-ri* ki-ta.
student-NOM office-to 2-cl come-past
'Two students came to the office.'

(137) a. *Kuruma*-ga doroboo-ni *3-dai* nusum-are-ta.
car-NOM thief-by 3-cl steal-PASS-past
'Three cars were stolen by the thief.'
b. Kinoo, *gakusei*-ga [ano otoko]-ni *2-ri* koros-are-ta.
yesterday student-NOM that man-by 2-cl kill-PASS-past
'Yesterday two students were killed by that man.'

Miyagawa notes, however, that the class of verbs seen in examples like (136a–c) looks very much like the class of unaccusatives, including various verbs of motion and the (superficially) intransitive member of pairs meaning 'rise'-'raise', 'collapse'-'destroy', 'be cut'-'cut', 'close' (intrans.)-'close' (trans.). On this assumption, although the floated NQ in (136) does not c-command the surface subject, it does c-command the D-Structure position of the surface subject, represented at S-Structure by a trace.

(138) *Doa*$_i$-ga [kono kagi]-de e_i *2-tu* aita.

Obviously, exactly the same explanation can be provided for the passive examples in (137), if passive in Japanese involves movement from direct object position.

(139) *Kuruma*$_i$-ga doroboo-ni e_i *3-dai* nusum-are-ta.

We can now ask, internal to Japanese, whether the Experiencer verbs, both causatives and noncausatives, are unaccusative by this test. First let us look at the causatives. Unexpectedly, even NQs adjacent to the subject are rather unacceptable, but there is a clear contrast between these cases and nonadjacent cases that argues against an unaccusative analysis.[45]

(140) a. [3-tu-no omosiroi koto]-ga Hanako-o
3-cl-GEN interesting thing-NOM Hanako-ACC
yorokob-ase-ta.
happy-CAUSE-past
'Three interesting things made Hanako happy.'
b. ??[*Omosiroi koto*]-ga *3-tu* Hanako-o yorokob-ase-ta.
c. *[*Omosiroi koto*]-ga Hanako-o *3-tu* yorokob-ase-ta.

(141) a. [3-tu-no iyana koto]-ga Hanako-o
3-cl-GEN terrible thing-NOM Hanako-ACC
kanasim-ase-ta.
sad-CAUSE-past
'Three terrible things saddened Hanako.'
b. ??[*Iyana koto*]-ga *3-tu* Hanako-o kanasim-ase-ta.
c. *[*Iyana koto*]-ga Hanako-o *3-tu* kanasim-ase-ta.

Next, the noncausatives. Here the judgments are crisper, since there is little or no problem with examples in which the NQ is adjacent to the subject.

(142) a. [2-tu-no ii sirase]-ga Zyon-o zetuboo-e oiyat-ta.
2-cl-GEN good news-NOM John-ACC despair-to drive-past
'Two pieces of good news drove John to despair.'
b. [*Ii sirase*]-ga *2-tu* Zyon-o zetuboo-e oiyat-ta.
c. *[*Ii sirase*]-ga Zyon-o *2-tu* zetuboo-e oiyat-ta.
d. *[*Ii sirase*]-ga Zyon-o zetuboo-e *2-tu* oiyat-ta.

(143) a. [2-satu-no Faulkner-no hon]-ga Zyon-o
2-cl-GEN Faulkner-GEN book-NOM John-ACC
utinome-si-ta.
bowl over-past
'Two of Faulkner's books bowled John over.'
b. ?*Faulkner*-no *hon*-ga *2-satu* Zyon-o utinome-si-ta.
c. **Faulkner*-no *hon*-ga Zyon-o *2-satu* utinome-si-ta.

At this point, one might object that the various instances of backward binding could have different explanations. This is logically possible, but I think it is unlikely, given the similarities in the semantics of these cases, all of which (as we will see) involve some notion of causation. Compare the noncausal examples in (144).

(144) a. *Each other$_i$'s relatives considered [John and Mary]$_i$ angry.
b. *Each other$_i$'s rocks hit [John and Mary]$_i$ on the head.
c. *Articles about himself$_i$ in the *Times* attacked John$_i$.
d. *That picture of himself$_i$ flatters John$_i$.

The relevant generalization so far seems to be as follows:

(145) A Causer argument of a predicate π may behave as if c-commanded by an argumental DP governed by π.

This generalization covers the cases we have looked at. On the other hand, it is unprincipled: (145) bears no relation to anything else we know about binding phenomena.

By contrast, B&R's solution, insofar as it works, is principled. It has the admirable property that it reduces an odd binding phenomenon to a natural interaction of movement with more familiar binding phenomena. The choice between an unprincipled description of the facts and a principled but inadequate explanation of the facts is an unpleasant one. Fortunately, by the end of our long discussion of ObjExp predicates, we will be able to adopt B&R's explanation of backward binding in the context of a new and more nuanced view of the syntax of ObjExp predicates. For now, however, we are stuck with conflicting evidence. B&R's analysis of backward binding requires movement from internal to external position in ObjExp constructions. This movement, under normal assumptions, would require the subject position to be athematic, a description already argued to be incorrect. Furthermore, the analysis does not extend to clearly related cases. Yet the unaccusative analysis is the only one on the table that has the potential to explain backward binding.

For the moment, let us assume that the case for the unaccusativity of ObjExp verbs like *annoy* or *preoccupare* has not been proven, even though we have no better alternative as yet. This will require us to return to the linking problems posed by these verbs and seek a fresh solution. We will return to the binding problems later.

2.5.2 Other Arguments

Before closing this discussion, let us consider auxiliary selection and its relation to Case theory. I noted above that the unaccusative analysis of verbs like *preoccupare* contradicts usual assumptions about auxiliary selection in Italian. *Preoccupare*-class verbs take the auxiliary *avere* in the compound past tense, and not the *essere* found with all verbs tagged as unaccusative in previous literature. Additionally, I noted that there *are* also *essere* ObjExp verbs, which generally assign some inherent Case, as discussed by B&R.

(146) a. A Gianni è sempre piaciuta la musica.
to Gianni is always pleased the music
'The music always pleased Gianni.'
b. La musica è sempre piaciuta a Gianni.

If we assume that the traditional interpretation of auxiliary selection is correct, then we will naturally conclude that ObjExp verbs like *piacere* (unlike *preoccupare*) are unaccusative. We might very well accept for these verbs the analysis proposed by B&R, which posits the following representation at D-Structure:

(147) [e] è [$_{VP}$[$_{V'}$ piacuta la musica] a Gianni]

As we expect, these verbs form neither adjectival nor verbal passives, unlike *avere* ObjExp verbs.

(148) a. A Gianni piace questo libro.
to Gianni pleases this book
'This book pleases Gianni.'
b. *Questo libro è stato piaciuto (da Gianni).
this book was pleased by Gianni
c. *(A) Gianni è stato piaciuto (da questo libro).
to Gianni was pleased by this book

(149) a. Ai bambini non manca energia.
to the kids not lacks energy
'The kids don't lack energy.'
(see Perlmutter 1984:293, (4b))
b. *Energia non è mancato dagli bambini.
energy not is lacked by the kids
c. *Ai bambini è stato mancato (da energia).
to the kids was lacked by energy

Additionally, Guglielmo Cinque (personal communication) has noted that a postverbal nominative argument of *piacere*, like postverbal arguments of unaccusative verbs, allows *ne*-cliticization. By contrast, postverbal Causer arguments of verbs like *preoccupare* pattern with postverbal arguments of transitive verbs in disallowing *ne*-cliticization.

(150) a. ?Ne sono piacuti a Maria [solo due ____].
of them pleased to Maria only two
b. *Ne hanno preoccupato Gianni [solo due ____].
of them worried Gianni only two
c. *Ne hanno interessato Maria [due ____].
of them interested Maria two

Much the same distinction among Experiencer verbs has been proposed for Dutch by Hoekstra (1984) and Everaert (1986). Dutch has a class of

Experiencer verbs that are conjugated with *hebben* 'to have' and form verbal passives, and another class of Experiencer verbs that are conjugated with *zijn* 'to be' and do not (Hoekstra 1984:185–86).[46]

(151) a. Die fout *is* mij opgevallen.
that mistake is me struck
b. *Ik ben/werd door die fout opgevallen.
I am by the mistake struck

(152) a. Die fout *heeft* mij getroffen.
that mistake has me struck
b. Ik ben/werd door die fout getroffen.

Assuming this discussion to be correct, I will not claim that verbs with B&R-style analyses fail to exist. I will merely claim that the B&R-style analysis is wrong for the "surprising" cases of *avere* verbs, and right for the unsurprising cases of *essere* verbs.

Indeed, B&R are also not wrong in supposing that unaccusative verbs that assign accusative Case (anti-etymologically) exist. We have already seen a Japanese instance of this sort in (136b). The (a) sentences of (153)–(154) quite plausibly display English examples of accusative-assigning unaccusative verbs—at least if the failure of passive is any guide.[47]

(153) a. Smith's name escaped us for some reason.
b. *We were escaped by Smith's name for some reason.
c. We didn't remember Smith's name for some reason.
d. Smith's name was not remembered by us for some reason.

(154) a. The correct generalization eluded Pāṇini.
b. *Pāṇini was eluded by the correct generalization.
c. Pāṇini missed the correct generalization.
d. The correct generalization was missed by Pāṇini.
(see Perlmutter and Postal 1984:115)

The (a) examples in (155)–(157) show plausible examples of unaccusative verbs assigning structural dative, like *piacere*.[48] Crucially, as the (b) examples in (153)–(157) demonstrate, these verbs also form neither verbal nor adjectival passives at all (in contrast to their non-unaccusative congeners in the (c–d) sentences).[49]

(155) a. The play didn't appeal to Mary.
b. *Mary wasn't appealed to by the play.
c. Mary didn't care for the play.
d. The play wasn't cared for by Mary.

(156) a. This mattered to John.
b. *John was mattered to by this.
c. John cared about this.
d. This was cared about by John.

(157) a. The same idea occurred to Mary.
b. *Mary was occurred to by the same idea.
c. Mary thought of the same idea.
d. The same idea was thought of by Mary.
(see Perlmutter and Postal 1984:104–5)

Backward binding is possible with these predicates.

(158) a. Each other's names escaped Tom and Sue.
b. The solutions to each other's problems eluded the two scientists until they compared notes.

(159) a. Each other's remarks appealed to John and Mary.
b. Each other's welfare mattered to the students.
c. The problems with each other's ideas had never even occurred to Heisenberg and Bohr.

These instances of backward binding might very well be explained by B&R's view of binding, if the structures of these sentences are of the type they propose, with *to* disregarded for c-command purposes in (160b).[50]

(160) a. [Each other's names]$_i$ [$_{VP}$[$_{V'}$ escaped t_i] Tom and Sue].
b. Each other's remarks]$_i$ [$_{VP}$[$_{V'}$ appealed t_i] to Tom and Sue].

In any case, the existence of verbal passives of ObjExp predicates provides a positive argument against the unaccusative analysis of these predicates. I draw the conclusion that we cannot save the U(T)AH for this class by recourse to a simple unaccusative analysis, even though there are examples that fall into this basket. We need new suggestions—hypotheses whose consequences are more nuanced than the proposals we have examined. This will be the topic of the following chapters.