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Semantic correlates of the ergative/absolutive distinction[1]

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Abstract

I present below a battery of semantic properties which absolutives *(subjects of intransitive verbs and direct objects of transitive ones) have in common to the exclusion of subjects of transitive verbs. These properties are broadly characterized in terms of* bondedness to the verb, thematic role, *and* control phenomena. *In consequence we may regard languages in which case marking and verb agreement operate on an ergative/absolutive basis as codifying these semantic properties in surface.*

Following (by now) standard usage, we shall say that a linguistic phenomenon is *ergative* (or *ergative/absolutive*) if it treats subjects of intransitive predicates and direct objects of transitive ones in the same way to the distinction of subjects of transitive predicates. For example, a case-marking system is ergative if subjects of intransitive predicates, which we denote by S_i, and direct objects (DO) of transitive predicates are marked in the same way AND the subject S_t of transitive predicates is case-marked differently. We use the term *absolutive* to refer to S_i and DO collectively. Ergative phenomena contrast with *nominative* (or *nominative/accusative*) ones in which subjects, both S_i and S_t, are treated identically to the distinction of DO. Thus a typical nominative/accusative case-marking system will mark S_i and S_t identically and use a distinct marker for DO.

Ergative phenomena, in particular case marking, were once thought (ethnocentrically) to be rare and exotic. However, given the extensive descriptive work in recent years, we now know that ergative case-marking systems, as well as ergative verb agreement systems, enjoy a wide distribution across the world's languages, in terms of both areal and genetic distribution. See the extensive discussion in Plank (1979) and references cited there for corroboration of this point.

A plausible explanation for the distribution of ergative phenomena

comes from S. R. Anderson (1976, 1977a). He observes first that ergative phenomena are largely limited to ones, such as case marking and verb agreement, which are reflected in the surface morphology of languages. While there are some nonaccidental exceptions to this claim — see Dixon (1979) and Larson and Norman (1979) — Anderson's own data and those of later researchers (Blake 1979; Li and Lang 1979; Moravcsik 1978) support the general correctness of the claim. Anderson further observes that surface marking patterns of an ergative/absolutive sort, especially case marking, are generally limited to verb-peripheral languages — ones which place the verb either initially or finally in the least marked sentence types of the language.

He suggests then that case-marking paradigms have a perceptual function in that they enable speakers to discriminate the two major actants in a transitive clause. If S_t received a marker we will have an ergative system (DO remaining unmarked, and S_i not needing any particular mark as it is the only major actant in simple intransitive sentences). If DO gets marked we have a nominative/accusative system with S_i and S_t being unmarked. We note that Comrie (1981: 119–120) also supports this line of explanation.

This reasoning seemed to me plausible. In particular it gives an account of several of the distributional facts concerning ergative phenomena. It accounts for their prominence in verb-peripheral languages and their relative absence in verb-medial ones as follows: in a verb-medial languages (SVO being the most widespread type here) the positions of S_t and DO relative to the verb in basic sentences is distinctive, and the distinctness is preserved under major perturbations such as NP fronting and deletion. Deleting either S_t or DO yields a surface form which lacks either a preverbal or a postverbal NP so we may reconstruct which NP was deleted. Similarly with fronting. If the S_t is fronted we remain with an SVO order. If the DO is fronted the derived form lacks again a postverbal NP, so it must have been the DO which was fronted.

On the other hand, in verb-peripheral languages, position relative to the verb does not enable us to determine which NP was deleted or fronted. If we delete either S_t or DO from an SOV structure we are in each case left with a structure of the form NP + V, so in the absence of distinctive case marking on the NPs it is difficult to reconstruct unambiguously which of S_t or DO was deleted. Similarly, if we front the DO we are still left with a structure of the form NP + NP + V so mere position relative to the verb does not even enable us to tell whether fronting has occurred or not. The initial NP might be S_t, if no fronting occurred, or it might be DO if fronting occurred. An analogous analysis holds for verb-initial languages. Deleting either S_t or DO leaves the same surface string: V + NP. And

fronting of either NP in both cases yields the same surface string NP + V + NP. So once again distinctive case marking of S_t and DO enable one to reconstruct the identity of subjects and objects under the common perturbations of basic word order.

Furthermore, the arbitrariness of choosing S_t or DO to mark in transitive structures accounts for the most widespread type of ergative/absolutive marking systems: the one in which S_t receives an overt mark and both S_i and DO are unmarked. There is on this view no perceptual advantage in marking S_i since we do not need to distinguish it from any other major NP.

On the other hand, something more must be said here about what appears to me to be the most common type of nominative/accusative case-marking system (a more extensive investigation is needed here): S_i and S_t are overtly marked (the same) and DO is overtly marked (differently). The reasoning analogous to the previous case would predict merely that DO had an overt mark and S_i and S_t were unmarked (a reasoning which Comrie 1981 accepts).

Additional rationale for overtly marking both S_i and S_t is not hard to find. In Keenan (1976) it is shown that subjects, whether S_i or S_t, present a large battery of syntatic and semantic properties in common. Overtly marking these NPs, then, would be a surface coding of those properties. It would thus enable language users to better retrieve the antecedents or controllers of reflexives and other anaphors, coreferential deletions, etc. We refer the reader to that work for detailed discussion.

Our concern in this paper is to determine whether there is a comparable battery of properties for absolutives (S_i and DO) — properties which they have in distinction to transitive subjects, and which then can be understood as coded in surface by uniform case marking. We argue here that there is such a battery of properties. Unsurprisingly, given Anderson's observation concerning the surfacy nature of ergative/absolutive phenomena, these properties are largely semantic in nature.[2] We will note, however, a few cases where the surface manifestation of these properties is more extensive than the discussion of case marking above would lead us to expect.

For mnemonic reasons we present these semantic properties under three headings: (A) *Bondedness to the Verb*, (B) *Thematic Role*, and (C) *Control Phenomena*. These categories are not intended as either exhaustive or exclusive. Several examples we cite illustrate points from more than one category.

A. Bondedness to the verb

A.1. *Existence dependency*

The referent of a transitive subject S_t normally exists independently of the activity expressed by the predicate. But this is often not the case for absolutive NPs, where the activity expressed by the predicate may express the coming into existence of a referent for such NPs. (1)–(3) illustrate this for S_i's.

(1) a. A puddle formed on the floor.
b. A crowd gathered around John.
(2) a. A fire broke out in the west wing of Haines Hall yesterday.
b. A breeze sprang up and fanned the flames.[3]
(3) a. A tragic accident took place/happened/occurred yesterday on the corner of 4th and Main.

In (1) the existence of the puddle and the crowd is not independent of the act of forming or gathering. Similarly the fire and the breeze in (2) do not exist independently of the action of breaking out or springing up. The point is even more obvious in (3).

The sentences in (4) illustrate that the referent of a DO may not exist independently of the activity expressed by the transitive verb:

(4) a. A student lit a fire in the basement.
b. He committed a crime/made a mistake.
c. He took a walk/gave a lecture/hummed a little ditty/told a lie.

Again, the fire does not exist independently of the lighting (but the student, S_t, does). Nor does the crime exist independently of the committing, or the mistake of the making, or the ditty of the humming, or the lie of the telling.

What examples (1)–(4) have in common is that the predicates are semantically weak, saying little more than that an event took place, though sometimes incorporating some notion of the manner in which the event took place. It is the absolutive NP in these examples which in some sense actually gives the content of the predication. But such content sharing by and large does not seem to extend from transitive verbs to their S_t subjects, as noted above for (4a).

I am not claiming of course that absolutives always designate referents which come into existence as a function of the activity expressed by the predicate, but only that this is a possibility for absolutives in a way in which it is not for transitive subjects. It thus indicates one way in which absolutive arguments form a closer unit with the predicate than do S_ts.

A.2. *Multiple senses*

It is very common that the 'sense' of a predicate varies with the semantic nature of the referent of an absolutive argument, but much less common to find such variation with S_is.

More specifically, we find, for common everyday predicates, that exactly what is predicated of an absolutive argument varies with the semantic nature of that argument. This sort of variation appears to occur only infrequently with transitive subjects. (5) below illustrates this for S_i:

(5) a. John/the horse is still running.
b. The car motor/my watch is still running.
c. The faucet/my nose is still running.
d. My Fair Lady/the Braque exhibition is still running.

In (5a) *run* predicates both external movement of the S_i, that is, change of location, however momentary, relative to things which are not John or the horse, as well as internal movement, that is, movement of the parts of the S_i. In (5b) no predication of external movement is made. At best one of internal movement is. In (5c) no movement of any sort is predicated of the referent of the S_i itself, but only of some other object of an appropriate sort whose existence can be inferred from the nature of (the referent of) the S_i. And in (5d) no notion of physical movement is present at all. *Run* there means something like 'available for public enjoyment'.

Note that it does not seem appropriate here to say that *run* is four (further senses are not hard to find) ways ambiguous. The difference in the interpretation of *run* in these examples is conditioned by the nature of the object it is being predicated of. It is like a numerical function f whose value at x is x^2 if x is even and x^3 if x is odd. There is just one function, but it assigns values differently according to the nature of the argument.

To see that a similar sort of interpretative dependency obtains between transitive predicates and DO's, consider

(6) a. John cut his arm/his foot.
b. John cut his nails/his hair/the lawn.
c. John cut the cake/the roast.
d. John cut a path (through the field)/a tunnel (through the mountain).
e. John cuts his whisky with water/his marijuana with tea.
f. The company cut production quotas/prices.

If the DO of *cut* is an animal or a largish body part *cut* means something like 'make an incision in the surface of'. The integrity of the object cut is understood to be preserved — it still exists. No notion of intentionality is

implied John can cut Mary either intentionally or accidentally and in each case the adverb adds new, noncontradictory information. On the other hand, if the DO of *cut* denotes 'filamentous' objects, such as hair, grass, etc., as in (6b), we do understand, in distinction to the sense of *cut* in (6a), that the object was cut all the way through, not just made an incision in the surface of. Integrity is still preserved, but some notion of purpose is implied. *Cut* in this sense means something like 'trim', 'cut for the purpose of beautifying'.

If the DO of cut is a prepared foodstuff, like a cake or a roast as in (6c), we find a sense of purpose, as with the sense in (6b), as *cut* here means something like 'divide into portions for purposes of serving'. But no sense of 'beautifying' is present. Moreover, in distinction to both the earlier senses, the integrity of the object cut is by and large destroyed. Once you have cut the roast you cannot, by and large, cut it again. Nor of course can you be said to have cut the roast if you only made an incision in the surface of it. So the sense of *cut* in (6c) is different from those used in (6a) and (6b).

In (6d) we see that the DO of *cut*, the path or the tunnel, is in no sense itself dismembered. Rather what is cut is something else (the field or the mountain). The path, etc. is CREATED BY CUTTING (cf. A.1). In (6e) the DO of *cut* is a mass object which is ingestible, and the sense of *cut* is something like 'decrease the potency of by admixing a physically comparable substance'. The sense here is obviously different from the previous ones. For example the instruments that can be used for cutting in (6a) through (6d) are quite different in nature from the 'instrument' (water, tea) in (6e). Finally, we note that the sense of *cut* used in (6f) is something like 'reduce the value of along a (more or less) continuous dimension', the DO of course denoting something which can be measured or evaluated in such a way.

In short, we adjust our interpretation of *cut* to the nature of the object we are cutting. Examples of this sort are discussed more extensively and for a broader range of categories in Keenan (1979). Here we merely note that the sort of sense dependency discussed only seems to arise (for the cases of interest to us) between predicates and absolutive arguments. The reader may try choosing a transitive verb plus object and varying the subject to test for alternate senses, but in the many cases I have tried relatively little variation showed up.[4] By contrast, dictionaries commonly list very many senses for common verbs such as *run* and *cut* where the sense varies with the nature of the absolutive argument.

Once again, then, we have a close interpretative bond between predicates and absolutives but relative independence of interpretation between predicates and S_ts.

A.3. *Selectional restrictions and verbal classifiers*

As noted by Moravcsik (1978), predicates in a language may impose highly specific selectional restrictions on absolutive arguments but typically only impose weak and rather general restrictions such as humanness, animacy, or concreteness on S_ts. Moreover, the restrictions imposed on S_i and DOs are highly similar. Perhaps this is at least part of the reason so many verbs in English can be used both intransitively and transitively.

For example, the sorts of things which can spill (intransitive) are the sorts of things which someone can spill (transitive). At a guess they are limited to liquids and quantities of relatively small granular objects such as coffee grounds. But I know of no transitive verb whose subjects must denote in that class. The sorts of things one can $peel_{tr}$ easily and that can $peel_{intr}$ easily must have some sort of tegument. But we know of no transitive verb which requires that its subject have a tegument. Similarly the sorts of things that can $shatter_{intr}$ and that one can $shatter_{tr}$ must have a rather specific physical character — one not to my knowledge required by any transitive verb of its subject.

Checking different pairs of verbs we may note that the kinds of things that can stink are the kinds you can smell, the kinds that flutter are the kinds you can wave, the kinds that explode are the kinds you can blow up, etc. Again in each case we know of no transitive verb that requires its subject to be one that emits an odor, or is wavable, or is explodable, etc.

It seems clear, then, that given an arbitrary predicate in English we may infer more about the semantic nature of its absolutive arguments than we can about its S_t (if the predicate is transitive). So once again we have a case for a tighter link between predicates and absolutives than between predicates and transitive subjects.

A phenomenon semantically similar to selectional restrictions but morphologically more regular is evidenced by the 'object' classifiers on verbs in various Amerindian languages. These are verbal affixes which require that various arguments of the verb satisfy one or another semantic condition. For example, Navaho (Hoijer 1964, cited in Moravcsik 1978) has six such affixes which, when applied to transitive roots, indicate that the DO is a round solid object, a long slender object, a wool-like mass, a mudlike mass, etc. Similarly, when applied to intransitive roots they indicate that the referent of the S_i has these properties. It appears however that they do not function to classify properties of S_ts. Larson and Norman (1979) cite Mayan languages quite generally as possessing such classifiers, again restricted to absolutives. They further cite Hoijer (1946) to the effect that Cherokee and Chipewyan (Athabascan) also present such classifiers similarly restricted. Finally Klamath (Mary Louise Kean, personal com-

munication), also presents such classifiers, again restricted to absolutives.

Clearly then these languages overtly codify the notion *absolutive* in their morphology.

A.4. *Noun incorporation*

Noun incorporation is a process whereby a noun phrase is physically incorporated within the verbal structure. (7a,b) from Kitonemuk, taken from Mardirussian (1975), is illustrative:

(7) a. a- kəm a- ho- j.
he- make he- hole- DO
'He digs his hole.'

b. a- ho- kəm.
he- hole- make
'He hole- digs.'

Typically the incorporated noun is understood as nonreferential, lacks determiners, is not a proper noun, and participates in whatever phonological properties, e.g. vowel harmony, may affect complex words. We refer the reader to Mardirussian (1975) for a more detailed survey of the properties of incorporation.

What is of interest for our purposes is that the verb + incorporated noun seems to form a single semantic unit. We note in this regard that if the verb was transitive and it was the DO that was incorporated, the derived verb is intransitive. So, for example, if the language is ergative/absolutive in case marking, the subject of the verb in such a case will be absolutive not ergative (Comrie 1973). We might expect, then, that of the various NP arguments of predicates it would be absolutives that would be the easiest to incorporate, as they already form a closer unit with the verb than do transitive subjects. Mardirussian explicitly supports that claim and gives examples of incorporation of S_i and DO but not of S_t. We note that the most often cited examples of noun incorporation involve DOs. So further work is necessary to determine whether S_is are fairly generally accessible to incorporation to the exclusion of S_ts. Still, the survey in Mardirussian covers a reasonable number of languages, so we may conclude on the basis of our knowledge to date that the incorporation facts support the claim that absolutives are more closely bonded to their predicates than transitive subjects. (I note as well that while Mardirussian does not cite the basic word order of the languages he illustrates incorporation with, the examples of his with which I am independently familiar are all verb-terminal: for example, Sora and Turkish are verb-

final, Fijian and Malgasy are verb-initial. If this correlation turns out to be correct it would further support a link between incorporation and ergative/absolutive phenomena.)

B. Thematic role properties

By thematic role we understand relations such as *agent*, *patient*, *recipient*, *beneficiary*, etc., which NP arguments of predicates may bear to the action or state expressed by the predicate. We use the term loosely enough to cover the use of *theme* as developed in Gruber (1976) and utilized in Jackendoff (1972) and Anderson (1977b).

B.1. *Patient*

Absolutives, both S_i and DO, are commonly *patients* in the sense that their existence state is understood to be affected by the action expressed by the predicate. S_t is rarely if ever a patient in this sense. The examples in (8) below illustrate cases where the referent of the S_i has its existence state so affected. In particular it goes out of existence or moves in that direction.

(8) a. The car exploded/broke down.
b. The milk evaporated/spilled.
c. The wheat withered and blew away.
d. John disappeared/vanished/perished/died in Butan.
e. Fred's argument collapsed/fell apart.
f. The house is decaying/rotting away.

That DOs may function as patients is of course well known (see Hopper and Thompson 1980 for an extensive discussion). We cite the examples below to illustrate cases in which the referent of the DO goes out of existence or moves in that direction and which are thus similar in this sense to those in (8) above:

(9) John blew up the car/drank the milk/ate the cheese/killed the cat/broke the vase/destroyed Fred's argument/removed the stain.

Again, we find it difficult to find transitive verbs whose subjects undergo a loss of existence in virtue of the activity presented by the predicate.[5] More typically, subjects of transitive verbs are thematically *agents*, *instruments*, or *experiencers* and somewhat less frequently *locatives*, *temporals*, and *possessors*, but not *patients*. The point is the more

significant given that English seems quite generous with respect to which semantic roles it allows subjects to have. See Hawkins (1981) and Rohdenburg (1974) for justification of this claim.

Furthermore, the degree of existence affectedness may be morphologically reflected in the case-marking paradigms of a language. Thus Moravcsik (1978) cites languages such as Russian, Lithuanian, and Finnish (all nominative/accusative in case marking) where various NPs may take different case markers (holding the verb constant) according as their referents are understood to be totally or only partially (including not at all) affected by the action. For example, in Russian the meaning difference between *pour the coffee* and *pour some more coffee* may be reflected in the choice of accusative case for *coffee* in the first instance and the genitive case in the second. Equally Russian may discriminate the meanings of *the kasha remained on the table* and *some kasha remained on the table* according as *kasha* is case marked nominative or genitive respectively.

The relevance of these examples for our claim, as Moravcsik points out, is that the alternative case paradigms are available only for absolutives.

We may note as well that Anderson (1971) points out that somewhat comparable distinctions exist with respect to DOs in English. Thus in the pairs below the unmarked DO is understood to be more totally affected than when it carries a preposition.

(10) a. John shot/struck Bill.
John shot at Bill/struck at Bill.
b. John dug/hoed the garden.
John dug in the garden/hoed in the garden.
c. John visited/toured France.
John visited in France/toured in France.

Note that this phenomenon in English is less regular than the cases cited by Moravcsik in that the choice of preposition varies and the difference in degree of affectedness varies from one example to another.[6]

Moreover, it is not obvious that this 'irregular' pattern in English extends to S_is. But the examples in (11) are supportive, noting that English requires a surface subject and will not accept oblique NPs (PPs) as subjects.

(11) a. Chicago is windy/rainy.
b. It is windy/rainy in Chicago.
a. The room/the roof is hot.
b. It is hot in the room/on the roof.
a. The afternoon was rainy/cold.
b. It was rainy/cold in/during the afternoon.

Clearly in these examples the property determined by the adjective is understood to hold more extensively, exhaustively, or thoroughly of the S_i, in the (a) sentences than of the corresponding oblique NP in the (b) sentences.

Moreover it appears that we do not find such alternations with respect to transitive subjects, even ones expressing location or duration:

(12) a. New York overwhelmed Mary.
b. *It overwhelmed Mary in New York.
a. The evening cooled the building.
b. *It cooled the building in/during the evening.
a. This article claims that ergativity is beautiful.
b. *It claims in this article that ergativity is beautiful.

(For certain cases in [12] the starred sentences are acceptable if *it* is understood to refer to some object or event previously mentioned rather than used in the impersonal sense intended.)

Finally, let us note a very surfacy coding of affectee in German (pointed out to me by W. Klein): it appears that the unmarked nuclear stress in simple transitive sentences, especially ones with modals or auxiliaries, falls on the DO. Thus in *er hat den Vater gesehen*, lit: 'he has the father seen', stress most naturally falls on *Vater*. There is more variability in sentences with intransitive predicates, but it appears that with agentive intransitives nuclear stress most naturally falls on the verb, whereas with more patientlike S_is it falls on the S_i. Thus in answer to the question, What is all that noise?, in the answer *Der Vater singt* 'Father is singing' it is *singt* which takes the stress, whereas in an answer like *Das Radio läuft* 'The radio is on' it is *Radio* which takes the stress. This difference can even be productively used, as in sentences like *Die Kirche fällt ein*, lit: 'The church fell in'; stress on *Kirche* prompts the patient reading with 'fell in' understood as *collapse*. But with final stress, on *ein*, we get a more agentive reading translated by something like 'The church-goers joined in'. We leave this observation for further speculation, having no idea whether such use of stress or intonation contour has any cross-language application.

B.2. *Theme*

Absolutive arguments are always among those whose path of movement is specified by goal and source locatives with verbs of motion. S_t arguments are only so specified if the DO argument is also so specified.

We note that Gruber (1976) and Jackendoff (1972) use *theme* for 'object

which moves' and then extend that notion to a great many more abstract cases. Here we limit ourselves to verbs of physical motion and goal locatives to PPs with *into* and source locatives to ones with *from*.

The examples in (13) show that the goal locative *into the kitchen*, etc., specifies the endpoint of the motion of the absolutive (S_i).

(13) a. John went/ran/crawled into the kitchen.
b. John fell/dove/slipped into the pool.
c. The ball rolled/bounced/fell into the pool.

The examples in (14) below show that the goal locative specifies the endpoint of the motion of the absolutive argument (the DO) and not that of the transitive subject, which is not necessarily understood to change location.

(14) a. Bill pushed/pulled/yanked ~~Bill~~ John into the kitchen.
b. Bill dropped/threw/slid the log into the pool.
c. Bill rolled/dropped/lobbed the ball into the pool.

I can find no transitive verbs of motion where the goal locative specifies a movement path solely for the S_t. Note, however, that in (15) the referent of the S is understood to move and its path is (more or less, depending on the example) specified by the goal locative in virtue of the fact that the S must accompany, at greater or lesser distance, the DO whose path is directly specified by the goal locative.

(15) a. John brought/carried/wheeled the patient into the room.
b. John accompanied/escorted Mary into the room.
c. John followed/pursued/chased Mary into the kitchen.

Note that *carry*, *wheel*, *accompany*, and *escort* imply close physical contact between the referents of the S_t and the DO, so if the latter moves the former must follow the same path. *Follow* and *chase* allow that distance be greater. In fact, with *chase* (15c) does not entail that John entered the room, so the path of the S_t is not precisely specified by the goal locative.

Note also that there are intransitive verbs with goal locatives which do not overtly present any NP whose referent changes location, though the nature of the predicate is such that we infer easily just what it was that moved. Some examples are given below with 'bodily release' verbs:

(16) a. John spit/vomited/urinated into the sink.
b. John breathed/exhaled/burped into the flask.

Note that where such verbs permit a DO it is clearly its referent which moves:

(17) John spit blood/vomited his lunch into the sink.

Turning now to the second part of the generalization in B.2, consider source locatives with *from* PPs. Such locatives may predicate mere location rather than change of location, like *in* as opposed to *into*, but with verbs of motion they are usually understood as predicating change of location. (18) below shows that for intransitive verbs it is clearly the referent of S_i which changes location, beginning at the one specified by the *from* PP.

(18) John fell/slipped/jumped/leapt from the roof.

Similarly the most natural reading of (19) below is the one in which the referent of the DO changes location:

(19) a. John yanked/threw/lifted/dragged Bill from the roof/the bus.
b. John took/pulled/removed/withdrew the clothes from the tub.

Again it is difficult to find transitive verbs of motion where the source locative directly predicates change of location of the referent of the S_t. However, the following complicating factors should be noted:

First, a *from* PP does predicate (mere) location of an S_t (or an S_i) if the verb is not one of motion. Thus (20a) below entails (20b) and not (20c).

(20) a. John pinched Bill from the bus.
b. John was on/in the bus.
c. Bill was on/in the bus.

Unsurprisingly then, many sentences of the form illustrated in (19) above are ambiguous according as the source locative *from the roof*, etc., predicates change of location of the DO or mere location of the S_t. The ambiguity is perhaps clearer in

(21) a. John grabbed/pushed Bill from the bus.
b. John shot/speared Bill from the roof.

The point of these examples which is supportive of our claim in B.2 is that if the source locative is understood as predicating of the referent of the DO, then, as claimed, we understand that it changes location. But if it is predicated of the S_t it merely specifies location. We do not infer that the referent of the S_t changed location.

Note that the verbs of motion in (21b) are somewhat analogous to the (mainly intransitive) bodily release verbs like *spit* in (16). Something moves (the bullet, the spear) which is not overtly expressed in the sentence. Note further that if the DO in (21) is presented as an oblique, that is, with a preposition and thus indicating less than total affectedness,

as in (22) below, we get only the reading where the *from* phrase predicates location of the S_t.

(22) a. John grabbed/pushed at Bill from the bus.
b. John shot at Bill from the roof.

Second, the sort of analysis for the accompaniment verbs of motion in (15) for goal locatives applies to source locatives as well. Thus in (23) John is understood to accompany Bill/the book and thus changes location because they do.

(23) a. John carried Bill from the car.
b. John brought the book from the car.

Finally, let us note that we might like to strengthen the generalization in B.2 to the claim that in distinction to absolutives, S_ts are never themes, that is, are not understood as changing location. The stronger claim, however, is falsified by examples such as those in (24) below as well as those in (15) and (23):

(24) a. John entered/left the room at 6 pm.
b. John crossed the highway/swam the English Channel/fled the battle/jumped the fence/cleared the high bar.
c. John pursued/tailgated/drove Mary to Chicago.

C. Control phenomena

We are concerned here with expressions such as adjectives and infinitival phrases which occur within predicates and are understood to predicate something of the NP arguments of the main predicate. Not all the cases we consider would be called 'control' in current theories of generative grammar, but the term as we use it has no particular theoretical significance. We use it simply as a cover term for a class of phenomena we want to draw attention to, much as 'bondedness' and 'thematic role' were used.

C.1. *Control of predicate adjectives*

Adjectives within predicates are normally understood to predicate of absolutive arguments and only exceptionally of transitive subjects.

In examples (25) and (26) below the entire predicate is intransitive, taking only one NP argument S_i. The adjective within the predicate straightforwardly asserts a property of the referent of S_i. The adjectives in

(25) express a (possibly momentary) state that S_i is understood to be in, with varying degrees of certitude. The examples in (26) are change-of-state predicates, indicating that S_i has acquired the property expressed by the adjective.

(25) a. John is/seems/looks smart/angry/lazy.
b. John remained/stayed/died young/honest/penniless.
c. The table felt sticky/smooth.
d. The milk tasted sour/bitter.
e. The meeting sounds noisy/calm.
f. John arrived angry/happy.

(26) a. John got/became angry/lazy/fat.
b. The milk turned sour/green.
c. John grew old/stubborn.
d. John waxed loquacious.
e. The door flew/swung open/slammed shut.

In the examples below the main verb is transitive, taking two NP arguments, and the predicate adjective is understood to express a property of the DO, not of the S_t. (27) are 'state' predications as in (25) above, and (26) are change-of-state ones, as in (26):

(27) a. John saw/found Bill angry/despondent.
b. John considers/esteems Bill smart/clever.
c. John keeps his room clean/The medicine keeps him healthy.
d. John likes/wants/needs Bill happy/prosperous.
e. John ate/packaged the meat raw/dirty.

(28) a. John made Bill angry/happy.
b. The sun turned the milk sour/bitter.
c. The medicine rendered Bill anemic/lethargic.
d. John drove Bill insane/crazy.
e. John washed/scrubbed/steamed the clams clean/spotless.
f. John painted the wagon red/hammered the ring flat/shot Bill dead.
g. John swung the door open/slammed the door shut.

There seem to be no examples of structures like those in (27) and (28) with a bare underived adjective understood to predicate of the transitive subject. Recall, however, the oft cited examples *John struck/impressed Bill as (being) clever*. These violate the spirit of C.1 since *clever* is understood to predicate of John, not Bill. But they seem to me the exceptional case, the productive paradigm being that in (27) and (28). Note that even with an *as* complement, itself somewhat unusual, the more productive paradigm seems to be the object control case, as indicated in (30):

(30) a. John regarded/described/characterized Bill as clever.
b. The panel dismissed/ignored the remark as irrelevant/unworthy.
c. The rebels presented/promoted their cause as just/righteous.
d. John praised/lauded/touted Bill as exceptional.
e. John acknowledged the case as unusual.
f. They rejected the candidate as inept.

C.2. *Control of predicate infinitives*

It is overwhelmingly absolutives rather than transitive subjects which control the subject position of infinitives within predicates (*within* here is intended to rule out purpose clauses).

The examples in (31) below illustrate this with respect to S_i for several standard and a few not-so-standard cases.

(31) a. John wants/hopes/needs to arrive on time.
b. John decided/refused/agreed to review the proposal.
c. John began/started/ceased to study law.
d. John tried/managed/got to leave early.
e. John forgot/remembered/didn't think to lock the door.
f. John meant/intended/planned to leave early.
h. John asked/pleaded/demanded to leave the room.

The examples in (32) illustrate again some standard and a few not-so-standard cases of DO control:

(32) a. John asked/begged/beseeched/enjoined/encouraged Bill to review the proposal.
b. John allowed/permitted Bill to leave early.
c. John advised/warned Bill to lock his door.
d. John ordered/told Bill to lock his door.
e. John got/obliged/forced Bill to review the proposal.
f. The incident caused/decided/taught Bill to lock his door at night.

As is well known of course *John promised Bill to leave early* is a counterexample to our claim, but again it seems to be the exception, the rule here being exemplified in (32).

The examples we have adduced so far to illustrate C.2 cover the classical Equi NP deletion cases (and perhaps a little more). But equally the classical raising to subject and raising to object generate surface paradigms with similar control properties. In any event it is only surface absolutives which function as the understood subjects of such predicate

infinitives. (33) illustrates the classical raising to subject, (34) raising to object.

(33) a. John appears/seems to be honest.
b. John is likely/certain to arrive late.
(34) John believes/expects Fred to be a genius.

We should note here that control of infinitives of the sort illustrated above was represented in 'classical' generative grammar by cyclic rules — thus syntactic rules *par excellence*. Have we not then gone beyond the claims of Anderson that ergative/absolutive phenomena are surface ones? Perhaps we have to some extent, but I think not to the extent that the 'classical' generative treatment would suggest. Specifically, the control cases cited above are in some reasonable sense determined as a function of the predicate, and on current syntactic views would be represented as part of the lexical entry of the predicate. It is in fact reasonable to consider that the infinitives in question are arguments of the predicate. In this way they differ significantly from properly cross-clausal deletions — *John struck Mary and cried* — where in most languages it is the subject of the initial verb, whether transitive or intransitive, which controls the subject position of the second verb. It is principally this sort of control which is cited in Keenan (1976) as being a property of subjects. Control into arguments, however, as we have seen above, is more properly a property of absolutives.

D. Summary, and a note on explanatory adequacy

Reflecting on the distinctive properties of absolutives discussed in A–C above, it seems fair to observe that they are 'deeper' and more extensive than has been noted in the literature. There is then reason to believe that ergative case marking and verb agreement systems do codify, or signal in surface, a coherent semantic bundle of properties, in addition to the perceptual value they have in discriminating subjects from objects. Let us emphasize further than the absolutive properties we have discussed are somewhat artificially divided into the three mnemonic categories we used. In fact, the existence dependence property cited in A.1 is easily seen as of a piece with an appropriately generalized notion of patient: an NP whose referent exhibits a change in existence state as a function of the activity expressed by the predicate. Equally this generalized notion covers the use of theme discussed in B.2, as a theme undergoes a change in existence state, namely its location. Moreover the control properties discussed in C overlap at least with the discussion of goal and source locatives. It was in fact rather arbitrary to decide that absolutives 'control' predicate adjec-

tives but behave as themes with regard to predicate PPs. They could equally well have been said to control the PP in the sense of denoting the object which the PP predicates something of.

It is then reasonable to expect that the absolutive/ergative distinction is one which other linguistic phenomena would be sensitive to, or alternatively, which speakers would be sensitive to in interpreting expressions of their language. This would in fact seem to be the case. We shall illustrate it with a discussion of ways of deriving one-place predicates (P_1s) from two-place ones (P_2s) and conversely. As we use these terms, a P_1 may be syntactically simple (*walk*) or syntactically complex (*walk slowly*, *walk slowly and whistle rapidly*, etc.). What is critical here is that a P_1 requires just one argument expression to form a sentence (P_0). An argument expression may be of category NP, $\bar{S}$, or a nominalized predicate. Similarly a P_2 requires two argument expressions to form a sentence.

D.1. *Deriving one-place predicates from two-place ones*

Languages present productive means of deriving P_1s from P_2s which *respect absolutives*. We say that a way of deriving a P_1 from a P_2 *respects absolutives* if the absolutive argument (S_i) of the derived predicate has the absolutive properties (as presented in A–C above) of the absolutive argument (DO) of the P_2 it is derived from. It may of course have additional properties determined by the meaning of the derivational operation.

The examples in (35) below illustrate that passive respects absolutives. (We treat passive here as a way of deriving P_1s from P_2s, e.g. *be kissed* from *kiss*, etc.)

(35) a. A fire was lit in the basement.
A crime was committed yesterday.

b. John's arm was cut.
John's nails were cut.
The cake was cut.
A path was cut through the field.
Production quotas were cut.

c. The car was blown up.
The cat was killed/Fred's argument destroyed/the stain removed.

d. Bill was pushed/yanked/thrown/dropped into the pool.

e. Bill was made happy/rendered anemic/scrubbed clean/shot dead.

f. Bill was asked/allowed/advised/told/forced/taught to lock his door.

g. Fred was believed/expected to be a genius.

The predicates in the examples above are passives of various of the transitive predicates used earlier to illustrate one or another properties that absolutives typically have in distinction to transitive subjects. The NP which functioned as the absolutive (the DO) of the transitive predicate now functions as the absolutive (S_i) of the derived intransitive predicates *was lit in the basement*, *was cut*, etc. And indeed the reader may check that the derived absolutive (S_i) presents the properties of the absolutive of the underived predicate. For example, the existence of the fire in (35a) is still not independent of the activity of lighting (being lit). The passive predicates in (35b) still exhibit the different senses of their underived transitive sources. The selectional restrictions which the passive predicate imposes on its absolutive argument include those which the underived P_2 imposes on its absolutive argument. The existence of the car in (35c) is still affected in the same way as when that NP functions as the absolutive argument of the underived *blow up*. The absolutive argument in (35d) still has its movement path specified by the *into* PP as in the corresponding transitive. And the absolutive NPs in (35e,f,g) still control the subjects of the adjectives and infinitives as in the corresponding transitive forms.

As noted, a derivational operation has its own meaning and may impose additional syntactic and interpretative constraints on what it affects. For example, not all P_2s have natural passives, and the subject of the passive may have stronger selectional restriction and thematic role requirements than those imposed by the underived P_2 on its DO. For example, we sometimes find that subjects of passives are understood to be more affected by the action than when they function as DOs of transitive predicates.

(36) a. John supports the Obstructionist Party.
The Obstructionist Party is supported by John.
b. John changed his job.
John's job was changed.
c. John was watching Bill's house.
Bill's house was being watched.
d. John saw Mary entering the building.
Mary was seen entering the building.

(36a) is naturally interpretable as a mere statement of John's political allegiance, but its passive rather suggests that the Obstructionist Party depends in an important way for its existence on John's support. In (36b) we may naturally infer that John got a new job and that his old one itself remains unchanged (same duties and responsibilities, etc.). It is more natural to interpret the passive, however, in such a way that the nature of

the job itself was changed. (36c) is naturally a mere statement describing a possibly aimless activity of John's, whereas its passive suggests possibly ominous consequences for Bill or his house. Similarly the passive in (36d) carries a faint suggestion that Mary will experience negative consequences for her act, while the active carries no such suggestion.

We may then conclude that passive respects absolutives. Note that we are not claiming that a formal definition of passive must mention the theoretical term absolutive. We are only making the interpretative claim that subjects of passives are understood to have the absolutive properties of DOs of the verb the passive one was derived from.

Further, these semantic claims seem to me to have a natural explanatory role of a psycholinguistic sort: The language learner faced with forms like *cut* and *be cut*, *kiss* and *be kissed*, etc., may fairly infer on general principles (compositionality) that the more complex forms are semantically related in a more or less regular way to the forms they are built up from. But to learn just what that relation is he surely must learn what properties of the more basic form carry over to the derived one and what properties are peculiar to the derived one. And from what we have argued above he may infer that the absolutive properties of the two-place predicate carry over to the absolutive of the derived one-place one. Once a few cases have been learned, then the pattern may be extended to novel cases.

In addition to passive, it seems to me that reflexive and middle are also derivational operations which respect absolutives (though my analysis here rests on considerably less cross-linguistic data than in the case of passive).

As is well known, many languages (e.g. Russian) may form intransitive reflexive predicates by affixing transitive ones. The French example below will serve as an illustration:

(37) a. Jean a tué Pierre.
John has killed Pierre
'John killed Pierre.'

b. Jean s'- est tué.
John self- is killed
'John killed himself.'

Taking the predicate *se tuer* in (37b) as intransitive, note that its absolutive, *Jean*, preserves the patient property, going out of existence, that it would have as the DO absolutive of the transitive predicate *tuer* 'to kill'. In addition of course it acquires agent properties, which is the principle way in which such reflexives differ in meaning from their corresponding passives *Jean a été tué* 'John has been killed/was killed'.

Equally, subjects of reflexive predicates control predicate adjectives, PPs, and infinitives, as illustrated below:

(38) a. Jean se croît intelligent.
John self believes intelligent
'John believes himself to be intelligent.'
b. Jean se permet d' aller en vacances six fois par an.
John self allows to go on vacation six times per year
'John allows himself to go on vacation six times a year.'
c. John s'- est jeté dans la bagarre.
John self- is thrown in the fight
'John threw himself into the fight.'

(Note in [38c] that we are only claiming that the locative PP *dans la bagarre* 'in the fight' specifies the trajectory of John.)

Finally it also seems to me that middles, illustrated by (39) below from French as well as its English translation, also respect absolutives. In distinction to both passives and reflexives, all notion of agenthood is absent.

(39) La porte s'- est fermée.
the door mid- is closed
'The door is closed.'

Note in particular that existence-affecting properties are preserved. Thus in *un accident s'est produit* 'An accident took place' (lit: 'produced itself') the existence of the accident is not independent of the action of 'producing'. Similarly in *le vaisseau s'est effondré* 'the boat sank' the existence state of the boat is as affected in the same way as if someone sank it.

While it is clear that more work from this perspective needs to be done concerning the relation between passives, reflexives, and middles, it seems clear enough that in many basic cases we can infer that these derivational operations respect absolutives.

We may not, of course, infer that all ways of deriving P_1s from P_2s respect absolutives. For example, unspecified object deletion (UOD), morphologically productive in some languages (e.g. some of the Uto-Aztecan family), would derive the verb of (40b) below from that of (40a) by affixing the latter.

(40) a. John is sewing shirts.
b. John is sewing.

Clearly the absolutive (*John*) of (40b) does not have the absolutive properties of the absolutive (*shirts*) of (40a). Here rather we want to say

that UOD respects SUBJECT properties, not absolutive properties. Similarly, *antipassive* is a derivational process which preserves subject properties, not absolutives. See van Valin (1980) for some discussion.

Overall my strong impression is that the P_1 derivational process passive/reflexive/middle (they often use the same or overlapping derivational affixes, e.g. Russian, French, Quechua) are considerably more widespread than antipassive and (overtly marked) unspecified object deletion. But a systematic study is needed to ascertain that (recall the ethnocentric bias in early studies of ergativity). If further work bears out my impression, then we will have a stronger generalization: THE major intransitivizing operations in languages respect absolutives. But for the moment it is sufficient to acknowledge that several obviously major intransitivizing operations respect absolutives. Moreover, somewhat comparable claims can be made for major transitivizing operations in languages.

D.2. *Deriving transitive predicates from intransitive ones*

Languages commonly present ways of deriving P_2s from P_1s which respect absolutives.

Probably the most widespread valency-increasing operator is causative. See Shibatani (1976) for detailed discussion. Thus many languages, e.g. Turkish, Palauan, Kinyarwanda, may form P_2s with meanings like *cause-to-cry* from P_1s like *cry*. (41a) below from French is illustrative.

(41) a. Jean fait pleurer les enfants.
John makes cry the children
'John is making the children cry.'

b. Les enfants pleurent.
the children cry
'The children are crying.'

As (41a) entails (41b) it is clear that the absolutive, *les enfants* 'the children' in (41a) has the absolutive properties of the S_i of (41b). For example, the absolutive of *faire pleurer* 'make cry' must satisfy the selectional restrictions of *pleurer* 'to cry' (and perhaps must satisfy even stronger selectional restrictions). If the existence state of the absolutive of *pleurer* is affected to some extent, then the existence state of the absolutive of *faire pleurer* is affected to at least that extent (and often more), etc. Similarly, goal locatives specify the movement path of the absolutive of causative predicates as they do for the uncausativized one they are derived from:

(42) a. Jean est entré dans la pièce.
John entered into the room
b. Pierre a fait entrer Jean dans la pièce.
Pierre made enter John into the room

Clearly in both cases John moves from a point outside the room to a point inside the room. We note that without further investigation it seems difficult to check that absolutives of causativized predicates control predicate adjectives and infinitives, as the simple cases we considered in English do not seem to causativize naturally in French. Even so, however, it appears clear that causativization respects absolutives to a significant extent.

Of course, as with P_1 derivational processes, not all ways of extending the valency of a predicate respect absolutives. Moreover, these processes seem fairly productive across languages, though probably not as productive as causative. An interesting one, which I have elsewhere called *verbal case marking*, is evidenced by languages as diverse as Totonac (Penutian, Mexico), Kinyarwanda (Bantu), Latin, and Greek. For the Kinyarwanda data see Gary and Keenan (1977). As for Latin, recall that verbs may be prefixed with expressions which independently function as prepositions, yielding a verb with a valency increased by one, the derived verb requiring an NP that could have been introduced independently in the corresponding PP. For example, from the P_2 *ferre* 'to carry' we may form P_3s such as *trans+ferre* 'to carry across', *in+ferre* 'to carry into', *ex+ferre* (=efferre) 'to carry from', etc. And of course from P_1s such as *ire* 'to go' we may form P_2s such as *ad+ire* 'to go to, approach', *ante+ire* 'to go before, precede', etc.

Clearly verbal case marking respects subject properties, however, not absolutives. The subject of the derived predicate inherits the thematic role, selectional restrictions, etc., of the subject of the underived verb.

D.3. *Lexical relations: a psycholinguistic problem*

From the many examples we have given of P_1s and P_2s in English it is clear that many verbs have uses as both P_1s and P_2s. Of course in some languages we would have two forms, one basic and one derived for, e.g. transitive and intransitive *break*, transitive and intransitive *sew*, etc. But equally it is common to find a given lexical item functioning as both a transitive and an intransitive predicate.

Does our analysis of absolutives have anything of interest to say about such pairs? I think it does. Let us pose the question psycholinguistically. How does the language learner/user learn or comprehend the meaning

relation between the two *breaks*, the two *sews*, etc.? Modulo idioms, he can expect that the meanings of the two are not randomly related. Transitive *sew* will not be expected to mean *describe*, *employ*, etc. He may reasonably expect that one of the two arguments of the transitive use will have the same sort of semantic properties that the single argument of the intransitive use has. But which?

It would be elegant if we could say that the DO of the transitive use always has approximately the same semantic properties as the S_i in the intransitive use. But examples like *sew/sew a dress*, *smoke/smoke a cigar*, *paint/paint a portrait*, etc., show this to be false. Nor can we assume that the S_t argument of the transitive use is semantically similar to that of the S_i in the intransitive use. Examples like *the window shattered/John shattered the window*, *the water boiled/John boiled the water*, etc., show this to be false. Still there seems to me at least one generalization which can be made:

(43) For verbs with both transitive and intransitive uses, if the absolutive argument on the intransitive use has many of the properties we have characterized as absolutive in A–C above, then it will function as the absolutive argument (DO) of the transitive use.

We may infer from (43) that if a language has intransitive verbs translating those in (44) below then their subjects will function as DOs of those verbs in any transitive uses which may exist.

(44) form, gather, break out, occur, start, spread, explode, spill, wither, die, collapse, rot, evaporate

It would be nice to be able to strengthen the *if* claim in (43) to an *if and only if* one, but in the absence of a more refined analysis we cannot do so. For the *only if* part would allow us to infer that a P_2 whose DO had many absolutive properties would assign those properties to its S_i on an intransitive use. But this is incorrect, as the DOs in (45a) below are arguably patientlike, as their existence is affected or they undergo some change in state. But the subjects of those verbs on the intransitive use in (45b) are clearly agentlike, not patientlike.

(45) a. John walked the dog/ran the students around the park/-marched the troops up the hill.
b. The dog walked/the students ran around the park/the troops marched up the hill.

But even without the strengthened generalization, the one in (43) is still empirically significant and does provide a basis for a language learner to

creatively use intransitive verbs as transitive once a few instances have apprised him of the relation in (43).

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Notes

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2. We do not rule out, of course, that the ergative/absolutive distinction may be relevant at a level of pragmatic or discourse analysis. See Du Bois (i.p.) for some discussion along these lines.
3. Examples of this sort were given to me by Wayles Browne, years ago, citing Jan Firbas as the source.
4. Note that a clear counterexample to our claim here must be one where the sense of the verb varies just with the interpretation of S_t. So to check we must hold the transitive verb + DO constant. The best candidates for counterexamples that I have found are ones like those in (i)–(iii) below:

   (i) a. The soldiers cross the river here.
   b. The bridge crosses the river here.
   (ii) a. The police surrounded the house.
   b. A moat surrounded the house.
   (iii) a. Leaves covered the drain.
   b. John covered the drain (with leaves).

   So we may want to acknowledge that the sense of transitive verbs can vary with general properties such as animacy and (potential) agenthood of their S arguments, but such differences seem rather systematic, rather than the ad hoc adaptation of sense we saw in the case of absolutives.
5. The examples in (8) and (9) may be compared to those in (1)–(4) which indicate the coming into existence of the referent of an absolutive. Similarly we may note absolutives whose referent expands their existence state:

   (i) a. The disease spread.
   b. The rabbits multiplied.
   c. Prices doubled/went up.
   d. The corn grew.
   (ii) a. The travelers spread the disease.
   b. John copied/distributed/reprinted the article.
   c. The company increased its production/doubled its prices.

6. Wolfgang Klein (personal communication) draws to my attention, however, that this variation is somewhat more systematic in German, where a variety of predicates may prefix *be-*, allowing an otherwise oblique NP to appear as accusative without a preposition and with a greater affectedness reading:

(i) a. Wir sprachen über das Problem.
We spoke about the problem.
b. Wir besprachen das Problem.
We discussed/talked out? the problem.

(ii) a. Er klagt über das schlechte Wetter.
He complained about the bad weather.
b. Er beklagt das schlechte Wetter.
He 'was very sorry about/regretted' the bad weather.

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