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IN SEARCH OF Y/N S-AUX:  
A STUDY OF ANSWERS TO YES-NO QUESTIONS IN ENGLISH

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This study might be called a kind of quantitative discourse analysis. It is a search for a particular grammatical form in a variety of speech situations to find its actual frequency in environments where it would be predicted, and to see what occurs in its place when it does not appear.

The form is Y/N S-AUX, or the short-answer form, as it is known in the TESL literature: Yes or No, plus SUBJ plus AUX, matching the AUX of the Yes-No Question--

Is she a student? Does he know her? Have they arrived yet? Yes, she is. Yes, he does. No, they haven't.

--not a very interesting form grammatically, being, in fact, one of the most regular features of a language noted for its irregularities. Yet, for the applied linguist specializing in ESL curriculum development and teacher-training, a study of the frequency and distribution of any grammatical form is of practical interest, as will be discussed in the latter part of this paper.

The study focuses on these concerns:

A) In the data analyzed, how often did speakers use YNSAUX forms in response to yes-no questions (YNQs)?

B) If not YNSAUX, what was used in response to the YNQs?

C) In what kinds of speech situations was YNSAUX most often found?

Sources of recorded, transcribed data were chosen to represent as wide a variety of speech situations, speaker relationships and speech topics as possible, including interviews from radio and television (short, promotional interviews as well as lengthy, informational ones), casual conversations between familiars or between strangers, an argument between newlyweds, flirtations, a counseling session in which reasons for marital discord were hotly aired, and a tense interchange between political conspirators.

Figure I gives more complete information for each source. In categorizing texts for figure I and data analysis, attention was given to speech situation, relationship of the speakers, and whether or not speakers knew they were being recorded.

The answer to Question A, "How often did speakers use YNSAUX?" was as predicted: not very often. Of a total of 329 yes-no interchanges (YNIs) in approximately 5½ hours of conversation, only 26 responses, or slightly more than 8%, were of YNSAUX form. (See figures III & IV, categories 1 and 2). Such a finding may come as a revelation to those who must teach and re-teach this form to ESL beginners.

Question B, "What forms did native speakers most often use?" required two kinds of break-down to sort out the data. Figure III shows 11 structural categories, the total responses for each, and
I. KEY TO TRANSCRIPT CODE
With comments on sources and notes on data


3. WP--The Watergate Papers. Meeting of the President, Haldeman, and Dean, Oval Office, 9/15/72. 50 min. 24 YNI, 6 N, Ø YNSAUX


6. MD--Several interviews from the Mike Douglas Television Show, 1976. Recorded, transcribed by Ruth Cathcart. Approx 30 min, 36 YNI, 3 N, 1 YNSAUX

7. SS--"Somewhat Spontaneous": interviews, conversations between "friendly professionals"--recorded by ESL teachers for aural comprehension of "natural" English conversation. Speakers are aware that they are being taped. Recorded, transcribed by Joanne Dresner, Judy Olsen, Kyle Perkins. (Perkins from articles in TESOL Quarterly v. 13 #1 and RELC Journal, v.9, #1)approx. 60 min, 51 YNI, 13N, 4YNSAUX

8. FL--texts of flirtatious conversations, from "Components of Flirtation: Self-disclosure and Bids for Approval", Olsen, 1979. Unpub. paper. 13 min, 7 YNI, 1 N, 1 YNSAUX

9. IS--Short interchanges between strangers, 3 minutes or less in length. Transcr. by J. Olsen; texts from "What's Work", John Fanselow, 1979. Teachers College, Columbia U. Approx. 7 min, 42 YNI, 15 N, 12 YNSAUX

10. IF--Interchanges between friends, acquaintances or friendly colleagues. longest conversation: 7 min. Approx. 17 min. total, 22 YNI, 3 N, 1 YNSAUX

11. KS--KSFO Radio interviews used as promotions for a contest, 1978. 18 interviews, each using basically the same questions. Approx. 9 minutes, 33 YNI, 11 N, 4 YNSAUX
and examples of each from the data, coded for source and degree.
Figure II shows the categories of degree of "Yes-ness", No-ness", and "Hedged-ness", with examples of each category from the data, coded for source and structure. Combining the grammatical categories of Figure III with the categories of degree in Figure II, we have the grid in Figure IV, showing the spread of the total number of responses combined (see the circled number in the lower right corner of each square), as well as a breakdown of responses by source (indicated by capitals, coded in Figure I.)

Figure III shows a preponderance of single-word affirmatives and negatives: "Yes", "no", "yeah", "naw", "uh-huh", "uh-uh", and the like, alone or followed by further statement--137 in all (categories 3 and 4). Checking with Figure IV, we find that these responses cluster in the degree categories of "emphatic yes", "direct yes", and "direct no". Another large number of responses, 84 in all, are full or incomplete statements not preceded by "yes" or "no", 47 with the same proposition as the question, 37 presenting a new proposition (categories 8 and 9). Figure III gives examples of each category; Figure IV shows that they were used primarily for indirect affirmations or hedges, respectively. The third largest group is that of formulaic expressions of confirmation and denial, such as "sure", "I doubt it", "certainly", etc. --48 in all, alone or followed by further statement, clustering in the "direct yes" and "emphatic yes" categories of degree, structural categories 5 and 6.

Figure II--the degrees of "yes" and "no"--shows a much higher proportion of "yes" to "no" answers: 207 to 83. How much this had to do with the nature of the particular interchanges studied, and how much with the general nature of verbal English interaction, would be an interesting topic to explore.

Figures I and IV show us that direct yes-no questions were more often asked in interchanges between strangers (136 interchanges in 76 minutes) than between familiairs (143 interchanges in 94 minutes). This may have had more to do with the content of the particular conversations than with the relationships of the speakers, however, as the interchanges between strangers included talk-show interviews and other situations primarily for exchange of information.

The final question, C, "In what kinds of speech situations was YNSAUX generally found?" emerged only after data had been accumulated from many sources. Careful examination of Figure I will show that, of the 5½ hours hours accumulated speech-time represented in the data, roughly 3½ hours were of interchanges between familiairs (FM, CJ, SJ, FL, IF) and 1½ hours were of interchanges between strangers or near-strangers (IS, KS, MD, EB). 1 hour was of short conversations between ESL professionals who knew they were being taped for aural comprehension exercises in ESL classes (SS).

Examination of Figure 4, a breakdown of responses by degree, grammatical category, and source, shows that nearly all of the YNSAUX forms (23 or 26) were found in the 2½ hours of interchanges between strangers, near-strangers (as on the talk shows, in which
### II. Coding the Responses: Degrees of "Yes" and "No"

#### EMPHATIC

| YES (ey) | WP: | Dean: Absolutely. (C/D) |
| 40 | Pres: Hell yes. (C/D) |
|  | from Customer: Are these fresh? (holding cough drops) |
|  | IS: Druggist: What a foolish question! Let me show you my stock. Come here. (F/I-N) |

#### DIRECT

| YES (dy) | FL: | M: Yup. (Y/N) |
| 120 | from Caller: Is this Ed Bush? |
|  | EB: Talk Show Host: Yeah. Make it brief, we gotta go. (Y/N+) |

#### HEDGED OR INDIRECT

| YES (hy) | FM: | Therapist: Jack, are you having any reaction to my probing and inquiring with Sally, here, as to whether she has any reaction to your attachment, slight or much as it may be, to Nancy? Does it make you uncomfortable? Mr. P: (thoughtfully) I guess maybe in a sense it does. (F/I-S) |
| 47 | from E: Now they're bringing back cyclamates, aren't they? |
|  | G: Well, evidently they aren't causing cancer any more. ((F/I-N)) |

#### UNCLEAR

| OR "VERY" | MD: | Surgeon: It doesn't happen after every operation. |
| HEDGEY | I: You might have further surgery? | (F/I-N) |
| HEDGES" | S: Well, we can't be sure. (F/I-S) |

#### HEDGED OR INDIRECT

| NO (hn) | KS: | J: Not yet. (C/D) |
| 13 | from A: Yeah. That's a good job? (about a dept.store) |
|  | CJ: B: Not really. It's notions. (C/D+) |

#### DIRECT

| NO (dn) | SJ: | Roz: Uh-uh. I don't get seasick in boats like this. I get sick in sailboats. I think...I hope! Boy, if I get seasick, I'll be mad. (Y/N+) |
| 54 | from A: Have you come up with it yet? |
|  | SS: B: Nah. (Y/N) |

#### EMPHATIC

| NO (en) | IF: | Driver: (moves to left lane) I can go right through? |
| 11 | Trainer: No! Break your speed, break your speed! There's a car coming. My God! Turn now! (Y/N+) |
|  | from Pres: Did that disturb you? |
|  | WP: Dean: No, that didn't disturb me at all. No sir. (Y/N+) |
### III. CODING THE RESPONSES: STRUCTURAL CATEGORIES, WITH EXAMPLES FROM TEXTS

1. Y/N S-AUX: 'Classic' short answer form: 'Yes, I do'; 'No, he isn't'.
   - Count: 14

2. Y/N S-AUX+ "Classic" short answer plus further statement
   - Count: 12

3. Y/N: Single word responses:
   - "yes"
   - "no"
   - "yeah"
   - "naw"
   - "yep"
   - "nope" etc.
   - Count: 56

4. Y/N+: "yes", "no", etc., followed by further statement
   - Count: 81

5. C/D: formulaic expressions of confirmation or denial: 'sure', 'I doubt it', 'absolutely', etc.
   - Count: 31

6. C/D+: formulaic expressions followed by further statement
   - Count: 17

7. S-AUX ø: "It is", "I do", etc; alone or expanded
   - Count: 9

8. F/I-S Full or incomplete statement (without Y/N)—Same proposition as question
   - Count: 47

9. F/I-N: Full or incomplete statement, new proposition
   - Count: 37

10. Q: Question in reply to question
    - Count: 11

11. R ø: Repetition of words in question, but in statement form, with or without expansion
    - Count: 14
from IS:
C: Hello, is Judy Scott there?
A: No, she isn't. (dn)

from KS:
A: Mark, have you ever been to Puerto Rico?
M: No, I haven't. (dn)

from IS:
C: Can I make reservations for tonight's performance?
T: Yes, you can. We hold them until eight o'clock. (dy)

from IF:
W: Could I do a little reading in bed? W: You wouldn't mind?
H: 'M-h'm. (hy) H: 'M-'m. (hn)

from CJ:
A: Did you have the last test?
B: Yes, and I thought I did so marvelous because I really thought I was sure I knew most of them and when I was taking it this is a breeze. And I got a C. (dy)

from WP:
P: The grand jury is dismissed now?
D: That is correct. (dy)

from KS:
A: ...you can join the KSFO gang of over a hundred for four days in San Juan. Does that sound good?
L: Really! It sounds real good! (ey)

from KS:
A: Are you ready to go to Puerto Rico?
W: I certainly am. I'm really lookin' forward to it. (ey)

from CS:
A: Mr. Poole. He's a real good teacher. He teaches sociology, doesn't he?
B: Sociology 1 and 2. (dy)

from WP:
P: Have you had the P.O. checked yet?
H: That is John's area. I don't know. (h)

from MD:
M: Will they improve?
S: Alta will limp. (h)

from IF:
A: Have you gotten your Christmas shopping done yet?
B: Are you kidding? Have you been to the big stores lately? It took me an hour just to find a parking space! (en)

from FL:
M: (chuckle) I'm getting a little tired of (doing that demonstration) but I still do it on command—I--y'know, I also bark on command--
F: (laugh)
M: When you don't have tenure, you do a lot of things on command.
F: Uh-huh. Do you bite?
M: I bite, when I--but that's not on command. That's for pleasure. (r+) F: I see. F: Uh-huh
## IV. BREAKDOWN OF RESPONSES

**BY DEGREE**
- **vertical columns**—see fig. II for examples,

**BY STRUCTURE**
- **horizontal rows**—see fig. III for examples

**BY SOURCE**
- initials within each box—see fig. I for explanation of code

Circled numbers in each box refer to the total number of examples in that structure/degree category, from all sources

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<td>3. Y/N: Single word responses: &quot;yes&quot; &quot;no&quot; &quot;yeah&quot; &quot;naw&quot; &quot;yep&quot; &quot;nope&quot; etc.</td>
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people generally unacquainted with each other were nevertheless in a particular "goodwill" relationship), and interchanges between speakers who were conscious of being taped. Even more striking, the highest proportion of YNSAUX was found in one of the smallest samples: IS (short interchanges of complete strangers) had 12 YNSAUX in 42 interchanges in an accumulated total of 7 minutes.

In the entire group of texts of interchanges between strangers, including the aforementioned "goodwill" relationships of talkshows, YNSAUX was relatively infrequent, however, appearing 19 times in 136 interchanges, less than 15% of the time. But this was considerably more than in the interchanges of familiars, where YNSAUX appeared 3 times in 141 interchanges, or slightly more than 2% of the time.

It appears that the frequency of the short-answer form was an indication of the social distance between the speakers in the various interchanges—the more distant the relationships, the more frequent the YNSAUX. In the case of the speakers conscious of the tape recorder (4 YNSAUX in 51 YNIs, or about 6.6%), use of YNSAUX might have indicated slight discomfort, a subtle feeling of "something strange". YNSAUX might be posited as a distancing device, then, no doubt usually an unconscious one. If this is so, extended use of YNSAUX between intimates might well indicate a strain in the relationship—a "nervous-making" situation, as with the tape recorder, or interpersonal difficulties.

Suggestions for Further Studies.

The data analyzed so far suggest several directions in which further studies might go:

1) Further collections of short interchanges between complete strangers—difficult speech situations to capture—would be helpful, perhaps with short "man on the street" interviews prompted by a questionnaire of predominately yes-no questions on some current topic of interest. If taping is impractical, a checklist of the structural categories of possible answers (see figs III and IV) could be listed on a check-sheet to be marked by the interviewer.

2) More attention to the functions of the yes-no questions in the interchanges might reveal other patterns of answer forms. So far, the focus has been on the relationships of speakers, degree of positivity or negativity in their responses, and the kinds of speech situations in which they are interacting.

3) With large enough speech samples, it might be interesting to attempt a study of the styles of individual speakers, based on the frequency of particular grammatical forms within their speech. Close examination of the data for this project shows a consistency in the answer patterns of some speakers—John Dean's patterns are recognizable, as are those of a surgeon being interviewed on the Mike Douglas Show. However, the speech situation and topic may have more to do with the consistency of pattern than does the personal style of the speaker; much more investigation—and data—is needed. While time constraints have not permitted a detailed study of this kind yet, the first three sources in Figure I (Fanshel and Moss's marriage counseling sessions of one couple,
Carterette and Jones' extended conversation of a group of junior college students, and the various interchanges of a small cast of characters in the Watergate Papers) provide much further data, as yet unanalyzed, for such a project.

**SUMMARY**

A) In speech samples collected from a wide variety of contexts, short-answer forms appeared infrequently as answers to yes-no questions (about 8% of possible occurrences).

B) Forms most likely to be used in emphatic and direct affirmatives and direct negations were words such as "yes", "yeah", "uh-huh", "uh-uh", "naw", "no", alone or followed by further statement which was not a short-answer form (about 32% of total responses).

Forms most likely to be used in hedges and indirect affirmatives were full or partial statements not preceded by any single-word affirmative or negative. Statements as indirect affirmatives usually contained the same proposition as the question. Statements as hedges usually contained a new proposition in answer to the question.

C) Short-answer forms appeared much more frequently in interchanges between strangers (19 times in 136 interchanges in 76 minutes) and in self-conscious speech (4 times in 51 interchanges in 60 minutes) than in interchanges between familiairs (3 times in 143 interchanges in 194 minutes). The difference of frequency of YNSAUX in these different contexts may suggest that the short-answer form is an unconscious indication of social distance or discomfort with the situation.

**PRACTICAL APPLICATIONS**

The findings of this study may be of particular interest to those involved in teaching English as a Second Language, as the discipline moves from focus on patterns of form to patterns of function.

The short-answer form is ubiquitous in ESL materials, appearing with the introduction of each new tense: "Does she...? Yes, she does." "Can he....? Yes, he can." "Will they...? Yes, they will." etc. The YNSAUX form is often presented as the main vehicle for affirmative or negative answers. At the same time, the match of AUXs in question and answer, which serves little or no communicative purpose, is often difficult for the beginning ESL learner, resulting in confusion and frustration. This study has attempted to put the short-answer form into proper perspective, particularly for the novice teacher, who is likely to over-spend class time attempting to perfect some of the more obvious--and therefore, presumably, more "teachable" details of English, such as the AUX-AUX match of the yes-no question and answer.

Hopefully, what will be inferred from this study is that other forms of affirmation and negation should be practiced as well as the short-answer form, and that, for reasons of language frequency as well as position in the natural order of acquisition, and reasonable pedagogical expectations, YNSAUX need not be practiced extensively after presentation, particularly at the earliest stages of ESL. Also, as YNSAUX appears to be a distance marker,
its exclusive use would not prepare the learner of English for the variety of situations that s/he presumably would encounter. While it is unreasonable to expect a beginning learner of English to grasp all the distinctions of appropriateness, it is not unreasonable to expect the teacher to be aware of them when structuring situations to present and practice the language.

Hopefully, too, studies such as this will benefit not only the classroom teacher, but also those applied linguists working in teacher-training and ESL curriculum development, and can suggest a model for further investigations into the frequency and function of particular grammatical forms, as well as the range and frequency of forms in which particular functions are realized.

NOTES AND ACKNOWLEDGEMENTS

1 In this study, yes-no questions are considered to be questions beginning with AUX-SUBJ-VERB, statements with rising intonation, statements judged from context as bids for confirmation or denial, or tag questions.

2 The inspiration for this project came from a series of teachers'-room conversations with Ruth Cathcart at Alemany CCC in 1975. The investigation has developed slowly through our individual projects. At this stage, it would be difficult to pinpoint which ideas were originally Ruth's or mine, and which are a synthesis. Others who have provided helpful criticism along the way are Susan Rubin, K. Lynn Savage, Sandy McKay, Nessa Wolfson, James Kohn, Paul Willis, and Jagdish Jain. However, the composition of this paper and current arrangement of data, with whatever faults or weaknesses, are solely mine.

3 This is not to suggest that every use of YNSAUX is an indicator of distance—only that frequent use seems to be.

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Evidence from Turkish for the Unaccusative Hypothesis
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0. Introduction
Perlmutter (1978) proposes the Unaccusative Hypothesis as a linguistic universal. The Unaccusative Hypothesis stated within the Relational Grammar Framework claims that there are two types of initially intransitive clauses: the unaccusative clause which has an initial 2 but no initial 1, shown in (1), and the unergative clause which has an initial 1 but no initial 2, as shown in (2).

(1) \[ P \overset{2}{\rightarrow} \]
(2) \[ P \overset{1}{\rightarrow} \]

According to Perlmutter, there are semantic criteria which distinguish unaccusatives from unergatives such as involuntary action versus willed or volitional acts. Examples of unaccusatives in English are sentences like (3):

(3) a. Joe slid on the slippery ice.
b. Joe fell out of the window.

Examples of unergatives are sentences such as the following:

(4) a. Joe slid into third base.
b. Joe fell right on cue in the second act.

Assuming that impersonal passivization involves advancement of a dummy from 2 to 1, Perlmutter gives an argument for the Unaccusative Hypothesis based on the interaction of impersonal passives and the 1 Advancement Exclusiveness Law (1 AEX Law) using data from Dutch and Turkish. The 1 AEX Law is stated informally in (5).

(5) No clause can involve more than one advancement to 1.

Recall that the Passive structure in (6), as depicted by Perlmutter and Postal (1977), includes a transitive stratum: the stratum in which the advancee to 1 bears the 2 relation also includes a nominal bearing the 1 relation.

(6) \[ P \overset{1}{\rightarrow} \overset{2}{\rightarrow} \]
Perlmutter and Postal claim that this universal characterization of Passive applies to impersonal passives as well. Thus, in (7), we have an initially unergative clause appearing in a passive construction; a Dummy comes in at the second stratum making it transitive.

![Diagram](image)

The proposed universal characterization of Passive shown in (6) is met. In (8), the Dummy comes in as a 2 in an initially unaccusative clause which necessarily involves an advancement to 1 in order to create a transitive stratum for the impersonal passive construction.

![Diagram](image)

However, the diagram in (8) is ruled out by the 1 AEX Law since it involves two advancements to 1. As a result, Perlmutter makes the claim that impersonal passives provide a syntactic test to distinguish between intransitive clauses that are initially unergative and ones that are initially unaccusative. The claim is that if a clause is initially unergative, impersonal passive advancement is possible; if a clause is initially unaccusative, impersonal passive advancement is not possible. Consider the Turkish impersonal passives in (9) which are ungrammatical and are therefore claimed to be unaccusative. These verbs are also classed as unaccusative by the semantic principles set forth by Perlmutter (1978).

   Here fade-PASS-AOR
   ('Here it is faded.')

b. *Burada fışkîr-îl-îr.
   Here spurt-PASS-AOR
   ('Here it is spurted.')

c. *Burada kuru-n-ur.
   Here dry-PASS-AOR
   ('Here it is dried.')

The impersonal passives in (10) are grammatical; they are classed as unergative by the proposed universal
semantic principles.

(10) a. Burada dans ed-il-ir.
     Here dance -PASS-AOR
     'Here it is danced.'

b. Burada çalıṣ-il-ir.
     Here work-PASS-AOR
     'Here it is worked.'

c. Burada kavgə ed-il-ir.
     Here fight -PASS-AOR
     'Here it is fought.'

Thus, it appears that if we assume certain initial-ly intransitive clauses have initial 2's but no 1's, i.e. unaccusative, and that these initial 2's generally advance to 1, we can account for the ungrammaticality of certain impersonal passives. In turn, it seems that we can use the inability of certain verbs to impersonally passivize as a universal test for unaccusativity.

The remainder of the paper is devoted to two things. First, I present another piece of syntactic evidence from Turkish for the Unaccusative Hypothesis. Second, I reexamine the impersonal passive evidence summarized above, and use it to argue that either the 1 AEX Law or the dummy advancement analysis for impersonal passives may have to be abandoned.

1. The Gerund Suffix -ArAk

Internal to Turkish, there appears to be a further piece of syntactic evidence for the unaccusative versus unergative distinction in initially intransitive clauses: namely, the gerund construction in which an embedded verb exhibits the suffix -ArAk.

-ArAk is a productive suffix that can be used to convey three different meanings. It can be used to denote simultaneous action as in (11), consecutive action as in (12), or it can mean 'as' or 'for' when suffixed to the verb stem ol 'to be' as in (13).

(11) Ayşe (ağla-y-arak) gel-di.
     cry-GL-ArAk come-PST
     'Ayşe, while crying, came.'

(12) (Biz-i gör-erek) onlar da gel-di.
     us-ACC see-ArAk they too come-PST
     'Seeing us, they came too.'

(13) (ilk defa ol-arak) karsılış-ti-lar.
     first time be-ArAk meet-PST-PL
     'For the first time, they met.'

I will be concerned here only with the first of these meanings. As can be seen from example (11), the em-
bedded clause containing the -ArAk suffix (appearing in parenthesis for clarity's sake) cannot have a subject on the surface and generally appears directly after the matrix surface subject. Subject controlled Equi is obligatory in the sense that the structure for Equi must be present and Equi must apply. The controller of Equi is the final subject in the matrix clause; the target of Equi is the final subject of the embedded clause. Sentences which have coreferent subjects and do not have Equi are ungrammatical as exemplified in (14).

(14) *Ayşe (Ayşe ağlayarak) geldi.

Sentences which do not have coreferent subjects and thus do not have Equi are ungrammatical as shown in (15).

(15) *Ayşe (Ahmet ağlayarak) geldi.

I will show that the following conditions stated in (16), besides coreference, must hold for a sentence containing the -ArAk suffix to be grammatical.¹

(16) i. The controller and the target of Equi must bear the same initial grammatical relation.
   ii. The controller and the target of Equi must be final 1's.

Reviewing sentence (11), we see that these two conditions are met. Note that the controller Ayşe and the target Ayşe are both initial 1's and final 1's.

1.1. Arguments that the Conditions Must Hold

For sake of clarity, I have organized the grammatical relations of the sentences I will be discussing in boxes as in (17b) instead of the usual stratal diagrams.

   newspaper understand-PASS-ArAk read-PASS-PST
   'The newspaper, while being understood, was read.'

   b. Controller Target
   Initial 2 2
   Final 1 1

   -ArAk -PASS-PST
   ('The newspaper, while (PRO) understanding (it), was read.')

   b. * Controller Target
   Initial 2 2
   Final 1 2
   -PASS-ArAk -PST  
   (The newspaper, while being understood,  
   (PRO) read (it).')
   b. *  
   Controller Target  
   Initial 2 2  
   Final 2 1  

In (17), both clauses have passive structures. The controller and target bear the same initial grammatical relation and both are final 1's. However, (18a) and (19a) which are boxed in (18b) and (19b) respectively, do not meet the conditions for the -ArAk construction, and are thus ungrammatical. In (18b), note that while the controller and the target are both initial 2's, only the controller is a final 1, whereas the target is a final 2. In (19), these relations are reversed. While both controller and target are initial 2's, the controller is a final 2 and the target is a final 1.

(20) a. Çocuk (sakîz çîğne-y-erek) anne-si-ni  
      child  gum  chew  -GL-ArAk mother-POSS-ACC  
      öp-tü.  
      kiss-PST  
      'The child, while chewing gum, kissed his  
      mother.'
   b. *  
   Controller Target  
   Initial 1 1  
   Final 1 1

(21) a. *Çocuk (sakîz çîğne-y-erek) öp-ül-dü.  
      -GL-ArAk -PASS-PST  
   (The child, while chewing gum, was kissed.')
   b. *  
   Controller Target  
   Initial 2 1  
   Final 1 1

(22) a. *Çocuk (sakîz çîğne-n-erek) öp-ül-dü.  
      -PASS-ArAk -PASS-PST  
   (The child, while gum is being chewed (by  
   child), kissed his mother. ')
   b. *  
   Controller Target  
   Initial 1 1  
   Final 1 1

Sentence (20) is grammatical because, again, both of the conditions listed in (16) are met: the controller and the target are both initial and final 1's. In (21), the target is an initial and final 1 whereas the controller is an initial 2 and final 1. In (22), while the controller is an initial and final 1, the target is an initial 1 but a final 1. Thus, since the conditions are not met in
(21) and (22), they are ungrammatical as predicted. Now consider (23) which is boxed in (24).

(23) *Ben Ayşe tarafından (gül-erek) öp-ül-
I by laugh-ArAk kiss-PASS-
du-m.
PST-1sg
('I by Ayşe, laughing, was kissed. ')

(24) *
Controller Target
Initial 1 1
Final 1 1

(23) is ungrammatical because while the controller and target bear the same initial grammatical relation, the controller is a final ↑ and the target is a final 1. Thus, 'laughing' cannot refer to an action done by Ayşe, nor can it refer to 'I' if 'laughing' is placed after ben 'I' as in (25). 2

(25) *Ben (gül-erek) Ayşe tarafından öp-ül-dü-m.
-ArAk -PASS-PST-1sg
('I, laughing, by Ayşe was kissed. ')

This is a predicted consequence since the controller and target do not bear the same initial grammatical relation. 'I' in the matrix clause is an initial 2 whereas the target 'I' is an initial 1.

2. Consequences for the Unaccusative Hypothesis

Having established the conditions of grammaticality for sentences containing the -ArAk suffix, let us now see how they interact with the Unaccusative Hypothesis. Consider (26) in which the embedded verb is an unaccusative and the matrix verb is a passive.

(26) Hasta (kana-y-arak) hastane-ye getir-il-
patient bleed-GL-ArAk hospital-DAT bring-PASS-
di.
PST
'The patient, while bleeding, was brought to
the hospital.'

Controller Target
Initial 2 2
Final 1 1

(27) Good Year Blimp (üzeri-miz-den geç-erek)
on top of-1pl-ABL pass-ArAk
herkes tarafından merak-la sedyred-il-di.
everyone by curiosity-CON watch-PASS-PST
'The Good Year Blimp, while passing overhead,
was watched with curiosity by everyone.'
The conditions for grammaticality are met because assuming unaccusative advancement, both the controller and target are initial 2's and final 1's. (27) meets the conditions in the same way (26) does. Now consider (28) in which the embedded verb is an unergative and the matrix verb is a passive. The sentence is ungrammatical because the controller is an initial 2 and the target is an initial 1.

(28) *Oğrenci (ağla-y-arak) dövül-dü.
     (bagır-arak )
     student cry GL-ArAk beat-PASS-PST
     ('The student, while crying, was beaten.')
     shouting

In (29), the embedded verb is an unergative and the matrix verb is an unaccusative. As predicted, the sentence is ungrammatical because the controller and target bear different grammatical relations initially.

(29) *kız ( (top) oyna-y-arak) kay-diz.
     girl ball play GL-ArAk slip-PST
     ('The girl, while playing (ball), slipped.')

Note that when the unaccusative verb is replaced with an unergative the sentence is grammatical in (30).

(30) Kız ( (top) oyna-y-arak) şarkı söyle-di.
     sing
     sing-PST
     'The girl, while playing (ball), sang.'

More examples in which the controller and the target are combinations of unergative and unaccusative and are therefore ungrammatical appear in (31)-(34).

(31) *Kız (kayak kay-arak) düş-tu.
     girl ski -ArAk fall-PST
     ('The girl, while skiing, fell.')

(32) *Adam (yüz-erek) boğ-ul-du.
     man swim-ArAk drown-PASS-PST
     ('The man, while swimming, drowned.')

(33) *Adam (konuş-arak) öl-dü.
     man talk-ArAk die-PST
     ('The man, while talking, died.')

(34) *Adam (çalış-arak) hastalan-diz.
     work-ArAk get sick-PST
     ('The man, while working, got sick.')

Examples in which the controller and target are both unaccusative are given in (35)-(38).
(35) Adam (sayıkla-y-arak) öl-dü.
  man    talk in delirium die-PST
      'The man, while talking in a delirium, died.'
(36) Ahmet (üzül-müş görün-erek) yorgun bir sad-PRESUM appear-ArAk tired a
    hâl al-dâ.
condition take-PST
      'Ahmet, while appearing sad, had a fatigued air.'
(37) Güneş (kız-arak) bat-tî.
    sun    turn red-ArAk set-PST
      'The sun, while turning red, set.'
(38) Buz (eri-y-erek) küçül-dü.
    ice melt-GL-ArAk get small-PST
      'The ice, while melting, got small.'

The grammaticality of the -ArAk constructions in all of the data above can be explained by assuming the conditions stated in (16) and the Unaccusative Hypothesis. Recall that in an -ArAk construction the controller and the target of Equi must be final 1's. Thus, the -ArAk construction argues in favor of the Unaccusative Hypothesis. 3

3. Impersonal Passives Reexamined
We now return to the impersonal passive evidence that was discussed earlier. Given the 1AEX Law and the advancement analysis of impersonal passives, there appear to be counterexamples to the Unaccusative Hypothesis. Predicates which are classed as unaccusative by the semantic criteria allow impersonal passivization, as shown in the examples in (39).

    here slip-PASS-AOR
      'Here it is slipped.'
  b. Burada düş-ül-îr.
    here fall-PASS-AOR
      'Here it is fallen.'
  c. Bu göl-de boğul-un-ur.
    this lake-LOC drown-PASS-AOR
      'In this lake, it is drowned.'
  d. En çok Mart ay-in-da öl-ûn-ür.
    most a lot March month-POSS-LOC die-PASS-AOR
      'It is died most in the month of March.'
  e. Hastalan-îl-îr.
    get sick-PASS-AOR
      'It is become sick.'
  f. Bu yetimhane-de çabuk büyü-n-ûr.
    this orphanage-LOC quickly grow-PASS-AOR
      'In this orphanage, it is grown quickly.'
g. Yan-an ev-de yan-ıl-ır.
burn-PART house-LOC burn-PASS-AOR
'It is burned in a burning house.'

Assuming that the 1 AEX Law and the advancement analysis of passives were correct, these verbs (and many others) would have to be marked exceptionally as unergative. That is, the strong hypothesis that the proposed semantic criteria predict unaccusative vs. unergative predicates for all languages would have to be abandoned.

However, the predicates in (39) which are classed as unaccusative by semantic criteria, also behave as unaccusative with respect to the -ArAk gerund construction. That is, they can appear with other unaccusatives and passives. Some examples are given in (40).

(40) a. Sarhoş (yalpala-ya-arak) kay-dı.
drink sway-about-GL-ArAk slip-PST
'The drunk, while swaying about, slipped.'
bleed-GL-ArAk ground-DAT fall-PST
'Ahmet, while bleeding, fell to the ground.'
water-GEN under-LOC stay-ArAk drown-PST
'Ahmet, while staying (involuntarily) under the water, drowned.'
d. Ahmet (ışıkence gör-erek) öl-dü.
torture see-ArAk die-PST
'Ahmet, while undergoing torture, died.'
e. Ahmet (soğuk-ta kal-arak) hastalan-dı.
cold-LOC stay-ArAk get sick-PST
'Ahmet, while staying in the cold (invol.), got sick'
f. Ahmet (i iyı eğitim gör-erek) büyü-dü.
sick good education see- ArAk grow-PST
'Ahmet, while going through a good education, grew up.'

These predicates, as shown in (29) and (31)-(34), crucially cannot appear with unergatives.

If these predicates are unaccusative, then the question is how the impersonal passive facts can be accounted for. It has been proposed by Laura Knecht (personal communication) that the impersonal passive facts in (9), (10), and (39) can be explained by the following principle in (41).

(41) Intransitive verbs that have human subjects may appear in an impersonal passive construction.
Knecht's proposal allows the "exceptions" in (39) to be classed as unaccusative in accordance with the semantic criteria and the -ArAk gerund construction. Impersonal passives, it appears, cannot be used to distinguish between unaccusative and unergative verbs.

However, if this analysis is adopted, the validity of the 1 AEX Law (for Turkish) upon which the impersonal passive evidence is based, will have to be reexamined. Alternatively, it may be that the 1 AEX Law does hold for Turkish but the advancement analysis of impersonal passives does not. Thus, it appears that the original evidence using impersonal passives for the Unaccusative Hypothesis turns out to be evidence against one of two other hypotheses proposed as universals.

Footnotes

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1a If a framework which incorporates the dummy advancement analysis of impersonal passives is assumed, it will be necessary to modify condition (16ii) in view of examples as the following where the matrix verb is an (impersonally) passivized unergative and the embedded unergative is active.

(Düğün-erek) çalış-il-ir.
think-ArAk work-PASS-AOR
'It is worked while thinking.'

The controller is a final ¹ and the target is a final 1. Note however that both are initial 1's.
A second type of example which violates the condition (16ii) are sentences with incorporated objects where both the matrix and embedded verbs are passivized.

(Su yudumlan-arak) Türk kahvesi iç-il-ir.
water sip-PASS-ArAk coffee-POSS drink-PASS-AOR
'Turkish coffee-is drunk while water-is sipped.'

The controller and target are initial 1's but final ¹'s. Assuming that object incorporation creates an in-
transitive stratum to which passive applies, we have an impersonal passive like the example above. These two types of sentences are similar in that both involve a dummy advancement analysis of impersonal passives which places an unspecified nominal en chômage, thus violating condition (16ii).

Instead of positing two levels of syntactic representation, it might be proposed that the conditions for Equi are based on a semantic characterization using semantic roles.

(16i) The controller and target of Equi must bear the same semantic role, e.g. they must both be agents or non-agents.

Such a characterization however does not account for examples like the following where the embedded final 1 is an agent and the matrix final 1 is a non-agent.

-LOC both cry-GL-ArAk laugh-ArAk
money lose-PST
'In Las Vegas, Hasan, while both crying and laughing, lost money.'

Perlmutter's framework classes the matrix nominal as an initial 1 and is thus compatible with the embedded nominal which is also an initial 1.

The attempted meanings in (23) and (25) can be expressed by using the suffix -ken which does not require that the initial grammatical relations be the same.

According to Perlmutter's (1978) semantic criteria, predicates expressing states of mind are classed as unaccusative. In Turkish, with respect to the -ArAk construction, these predicates behave blindly in that they appear in the matrix clause with an embedded unergative or unaccusative, or vice-versa. Further work is needed to determine the nature of this behavior.

References

