The Effect of Focus on Argument Structure: Depictives vs Resultatives[1]

Bokyung Noh
The University of Texas at Austin

A variety of linguistic evidences have been to support the assumption that depictives and resultatives are different in their thematic structures with a main predicate, despite they appear identical on the surface. Both depictives and resultative contain a subject NP, a verb, an object NP, and an adjective following the object NP, as shown in (1)-(2). However, the thematic relation between the verbs and the adjectives are different. In depictives, the adjective characterizes the object NP in relation to the action or process described by the verb. Thus, (1a) means: 'I ate the beef and at the time I ate it, it was raw.' The NP is characterized at the time of the action of the verb. In the resultatives, the final adjective characterizes the state of the object NP, a state which results from the action or process described by the verb. Thus, (2a) means: I caused the window to be clean by wiping it; the adjective describes the final state of the NP.

> (1) a . I ate the beef raw.
>   b. I ate the food cold   (depictives)
> (2) a. I wiped the window clean.
>   b. I kicked the door open.   (resultatives)

Recently it has been proposed that the argument structure is reflected by sentence accentuation (Schmerling 1976, Gusenhoven 1983, Selkirk 1984). The main claim in the focus theory (e.g., accent percolation theory) is that in a focus constituent consisting of a head and an argument, the accent is realized on the argument, everything else being equal (Gussenhoven 1983, Selkirk 1984). Uhmann (1991) proposes that if focus is assigned to a constituent, all the phonological phrases of that constituent bear an accent. She also points out that a head and an argument form a single phonological phrase, whereas a head and an adjunct form a separate phonological phrase, Following Uhmann (1991), I assume that a pitch accent is the evidence for phonological units and manifests focused words or constituents.

The accentual differences between head-argument and head-adjunct are clearly shown by Gussenhoven (1992) as follows: when a head-argument structure is in focus, as in (3), the accent falls on the argument, *tent*, while when a head-adjunct structure is in focus, as in (4), an accent is realized on the head *smoked* and the adjunct *tent*, which are in separate phonological phrases. Likewise, both *gerookt* 'smoked', and *tent* 'tent' are accented in Dutch. The phonological phrase is represented by parenthesis, the focus structure is by bracket and the accented words are capitalized.

> (3) a. John [(stayed in the TENT)]ꜰ
>   b. John [(in the TENT gebleven)]ꜰ

---

(4)   a. John [(SMOKED)(in the TENT)]$_F$
        b. John [(heeft in the TENT) (gerookt)]$_F$
        (Gussenhoven 1992: 94)

Does the distinction between an argument and an adjunct exist? My goal in this paper is to investigate the issue of how the theory of focus applies to the different types of secondary constructions, namely depictive and resultative constructions. The experiments are conducted to examine the statuses of resultative and depictive constituents in terms of their focus marking.

1.   A Brief Sketch: Production Test

Three experiments were performed. In each experiment, subjects were asked to utter the given test items as natural as much. Before introducing the experiments, I would like to mention the following considerations that were crucial in designing the tests.

First, the experiments concern only broad focus. The focused constituent contains a primary predicate, a secondary subject, and a secondary predicate. The focus domain is strongly suggested by the corresponding questions. Second, it is avoided that the entities in the focus, in particular, the secondary subject, are already mentioned in the previous context. While the best way to guarantee newness for the secondary subject would be using indefinite NPs, depictive secondary predications, typically do not allow for them. Consequently, I used definite NPs, but only those that are not given in the preceding context, but either by general world knowledge (e.g., house, window, eyes, head) or by bridging inferences from the context.

2.   Experiment 1: What-happened context

2.1. Subjects

Ten native speakers of English (four males and six females) participated in the experiment. The subjects were all in their twenties or thirties. The subjects were graduate students in the department of linguistics and of foreign language education at the University of Texas at Austin. All were native to the purpose of the experiment.

2.2. Materials

The material consisted of twenty-five experimental sentences which consist of fifteen resultatives and of ten depictives. The test items contained either depictive or resultative in the answers to the questions. There were no filler items. The ten resultative constructions consisted of ten transitive and five intransitive (unergative) sentences. The depictive construction involved only Object-Oriented Depictives (OODs). This was that the OOD was at postverbal position, just as in resultative construction.

2.2. Procedure

Each question-answer pair was written on a separate sheet (for the data, see Appendix 1). The experiment was performed in the cube of linguistics department. All the sentences were randomly given to the subjects. Subjects were asked to first read the text silently and then aloud as if they were engaged in real conversation. When they made an error in their production, the sentences were read again. This was to prevent that the subjects got into the repetitive intonation pattern in their second production. The experimenter asked the questions first and then the subjects answered. The subjects' natural speeches were tape-recorded. Their utterances were judged by the experimenter's ear.

2.4. Result

250 sentences were tested. Eighteen sentences (twelve resultatives and six depictives) had missing values. The missing value included the following cases: either subjects did not say the given answers or subjects' accentual patterns were not clear enough to judge. The missing values were not calculated in the results. The result is shown as follows:

(5)   Accents in Q/A pairs

Accents	Resultatives	Depictives
NP (secondary subject)	56% (76 sentences)	
NP + secondary predicate		10% (10 sentences)
Predicate	44% (62 sentences)	90% (84 sentences)

3. Experiment 2: Parallel Construction

3.1. Material

The same ten subjects participated in the experiment. Ten subjects of each language were given the parallel constructions whose answers contained resultative constructions. This test was conducted only with resultatives, not depictives because, as shown in the result of the first experiment, the depictives clearly had accents, whereas the situation was less clear in the resultatives. The parallel construction under study had two subtypes: In three sentences, two simple activity verbs were conjoined with a resultative construction. In the other three sentences, two simple transitive activity verbs were conjoined with a resultative construction.

3.2. Procedure

Each question-answer pair was written on a separate sheet (for the data see Appendix 2). All the sentences were randomly given to the subjects. The subjects were asked to first read the text silently and then aloud after hearing the questions. The subjects' natural speeches were tape-recorded. Their utterances were judged by the experimenter's ear.

3.3. Results

Out of sixty sentences, the missing values (three sentences) were not included in the results. The accent tended to fall on the secondary predicate when it was adjoined with two transitive verbs, while the tendency was lower when it was with two intransitive verbs. The result is shown in (6).

(6)   Accents in Parallel Constructions

Accent	Two activity (int.)+resultative	Two activity (trans.) +resultative
Verb	52% (14 sentence)	
NP	33% (9 sentences)	30% (9 sentences)
Predicate	15% (4 sentences)	70% (21 sentences)

4. Experiment 3: Dialogue

4.1. Materials

Th materials consisted of six dialogues which disambiguated three ambiguous sentences. The sentences were *My dog licked his plate clean, He wore his socks ragged, I rode his horse tired.*[2]

4.1. Procedure

Six dialogues were written on a separate sheet (for the data, see Appendix 3). The dialogues were randomly given to the subjects and then the subjects were asked to read the whole dialogue in a natural way. The subjects' natural speeches were tape-recorded. Their utterances were judged by the experimenter's ear.

4.2. Result

In this test, the subjects usually had an accent on the predicate in the depictive constructions. However in the resultative constructions, the accent usually fell on either on the NP or the resultative predicate. The result is shown in (7).

(7)   Accents in Dialogues

Accent	Resultatives	Depictives
Secondary subject	44% (13 sentences)	
NP + predicate		13 % (4 sentences)
Predicate	56% (16 sentences)	87 % (26 sentences)

---

[2] The sentence *You rode my horse tired* was problematic. Most of the English subjects did not detect Object-Oriented Depictive (OOD) reading but agreed that this sentence had both resultative and Subject-Oriented reading with the meaning 'you rode my horse when you were tired'. Four subjects responded that the primary reading was resultative and the OOD reading might be possible, even though they have rarely said this sentence with the OOD reading. The six subjects denied that this sentence had the OOD reading.

5.   Analysis

5.1. Resultative Construction

The experimental results show that the pitch accent fell on either a secondary subject or a resultative predicate. The number of subjects who had an accent on either one was almost evenly divided. This is clearly shown in the first two tests (Q/A pairs and dialogues). How can the contrastive results be explained?   I assume two different types of rules are equally existent in English resultative constructions. One is a variant of the Nuclear Stress Rule (NSR) by Chomsky and Halle (1968), the other is the accent percolation rule of focus theory. The NSR claims that a sentence's main stress is on its last major-class word (e.g., noun, verb, adjective, * particle) as follows:

> (8)   *Nuclear Stress Rule* (Chomsky and Halle 1968)
>   If there are two or more instances of [1stress] in a phrase or S,
>   Assign [1stress] to the rightmost of these.

So, the accents on the resultative predicates is assumed to show that the resultative predicate gets the strongest stress because of its sentence-final position, independent from argument structure.

On the other hand, according to the accent percolation theory, in focus constituents consisting of a head and an argument, the accent is realized on the argument: In an adjunct-head structure, the accent is usually realized on the head and the adjunct. The accent pattern on the postverbal subject provides clear evidence that the subject of the resultative phrase is an argument of the verb (a primary predicate). This has an important consequence in that contrary to the assumptions of the NSR, a secondary subject has an accent, even though it is a non-final constituent.

The dichotomy between the NSR and the accent percolation rules is based on the notion of sensitivity of accent to argument structure. In this sense, I call the former an Argument-Insensitive rule, the latter an Argument-Sensitive rule. The argument-insensitive rule is explained with the notion of phonological phrasing. That is, when connecting the basic idea of the NSR (the last constituent gets stressed) with the idea of phonological phrasing, the NSR is assumed to apply to phonological phrasing in that the last phonological phrase gets strongest accent. Then, based on this assumption, we could explain the accentual pattern of resultatives in this way: resultatives have two focus structures. In one, a resultative is integrated in a phonological phrase and within it a secondary subject has an accent as an argument as in (9a). In the other, a resultative forms its own phonological phrase with a main verb and the phonological phrase is strengthened by the NSR as in (9b). But note that in (9b), the formation of phonological phrases is, to a certain extent, optional. An A-S rule is also applied between V and NP (head+argument) in (9b) where NSR is applied. The accented words are capitalized.

> (9)   a. [(v   NP   adj)   ] $_F$------ Argument-Sensitivity
>   b. [(v   NP) (ADJ)] $_F$ ------ Argument-Insensitivity
>   (strengthened by NSR)

5.2. Depictive Construction

The distinction between argument-sensitivity and argument-insensitivity is much less clear in depictive constructions. The results show that almost 90% of the sentences have an accent on the depictive predicate. The strongest accent on the depictives might be explained by an effect of the NSR because the last phonological phrase is strengthened by the NSR. The following is the possible focus structure of depictives. Note that, in (10a), the secondary subject has an accent by the application of an accent percolation rule for head/argument structure.

> (10)   a.[(v NP) (ADJ)   ] ------ NSR
>   b.[(V) (NP) (ADJ)] ------ NSR

It should be noted that resultatives behave differently from depictives, although they share an accentual pattern by having the strongest stress on the secondary predicate. The distinction is that depictives resist being integrated in a phonological phrase, whereas resultatives can be integrated into a phonological phrase, as shown in (11).

> (11)   a. Resultatives   [(v NP adj)] ------ Integration possible
>   b. Depictives   * [(v NP adj)] ------ Integration impossible

When the resultatives are integrated in a phonological phrase, an accent falls on the direct object (a secondary subject), not on the resultative subject as shown in (11a). However, we cannot find such cases in the depictive construction because depictives always carry accents. So, a depictive forms its own a phonological phrase without integration into a phonological phrase with a head. Note that the NSR explains why resultative and depictive constructions have an identical accentual pattern.

6. Conclusion

In this paper I have examined the focus structure in secondary predications. To determine the source of the differences between depictives and resultatives, an experiment was conducted. Three experiments were conducted. First, in the wh-question-answer pairs (Q/A), subjects were asked to utter answers with resultatives (e.g., *I painted my house clean*) and with depictives (e.g., *I ate the food cold*). Second, in the same type of Q/A pairs, subjects were asked to utter the answers with parallel constructions (e.g., *I played the piano, read a book and wiped windows clean / or ate the soup hot*). Third, ambiguous sentences (e.g., *he wore his socks ragged)* were given and the subjects were asked to read the whole dialogues which disambiguated the ambiguities of the sentences.

The results from the experiments show that English is partly sensitive to argument structures and partly insensitive to it. The findings support the original assumption that focus is sensitive to the argument structure. The argument-sensitivity is explained by the focus theory which assumes that an argument/head relation differs from an adjunct/head relation in focus structure. However, the argument-insensitivity can be explained by the NSR, which is a pure phonological rule.

References

Chomsky, Noam and Horris Halle 1968. *The Sound Pattern of English.* N.Y.: Harper and Row.

Dowty, David. 1979. *Word Meaning and Montague Grammar - The Semantics of Verbs and Times in Generative Semantics and in Montague's PTQ.* Dorrecht: Reidel Publishing Company.

Gussenhoven, Calos. 1983. "Focus, Mode, and Nucleus". *Journal of Linguistics* 22, 377-417.

---.   1992. "Sentence accent and Argument Structure". *Thematic Structure: Its Role in Grammar* ed. Iggy M.Roca. Berlin, 79-105. Kluwer Academic Publishers

Halliday, Michael A.K. 1967. "Notes on Transitivity and Theme in English". *Journal of Linguistics* 3, 37-81.

Jacobs, Joachim. 1994. Informational Autonomy Focus and Natural Language Processing, *Working Papers of the Institute for Logic and Linguistics*, 113-132. IBM Germany Scientific center, Heidelberg.

Levin, Beth and Malka Rappaport Hovav. 1995 *Unaccusativity : At the Syntax-Lexical Semantics Interface.* Cambridge. Massachusetts : MIT Press.

Napoli, Donna Jo. 1992. Secondary Resultative Predicates in Italian. *Journal of Linguistics* 28.1: 53-90.

Rapoport, Tova.R. 1993. "Verbs in Depictives and Resultatives". *Semantics and the Lexicon*, ed. J Pustevosky, 163-184. Kluwer Academic Publishers.

Selkirk, Elisabeth O. 1984. *Phonology and Syntax : The Relation between Sound and Structure,* Cambridge, Mass: MIT Press.

Simpson, Jane. 1983. "Resultatives". *In Paper in Lexical -Functional Grammar,* ed. L. Levin, M. Rappaport and A Zaenen, 143-157. Bloomington, Indiana : Indiana University Linguistics Club.

Schmerling, Susan F. 1976. *Aspects of English sentence Stress.* Austin: Texas University P ress.

Stechow, Arnim von and Susanne Uhmann. 1986. "Some remarks on Focus Projection". *Topic, Focus, and Configurationality,* eds.Werner Abaham and Sjaak de Meij, 295-320. Amsterdam, Benjamins

Uhmann, Susanne. 1991. *Fokusphonologie.* Tubingen : Niemyer.

Appendices

Appendix 1: Materials for Experiment 1 (R= resultative, D= depictive)

Q: What did you do?
1. I wiped my windows clean. (R)
2. I dyed my hair blue. (R)
3. I ate the food cold. (D)
4. I ate the soup cold because there was no stove. (D)
5. I am a vegetarian. I ate the vegetables fresh. (D)
6. I presented my paper unfinished. (D)
7. I shaved my hair off at barber's shop. (R)
8. I saw the movie. It was funny. I laughed my head off. (R)
9. I went out to buy something. I bought the shop empty. (R)
10. I participated in the race. I ran my shoes threadbare. (R)
11. I met a friend and drank my beer cold. (D)
12. After hearing that the hurricane might hit our town, I nailed the windows shut (R)
13. I watched a horror movie. I screamed my throat raw (R)
14. I needed a lot of money. I sold my house cheap(D)
15. I painted my house red. (R)
16. I washed my clothes white. (R)
17. I ate watermelons cold. (D)
18. I tanned my skin black (R)
19. I cried my eyes out. (R)
20. I combed her my straight (R)
21. I cried my handkerchief wet to see a sad movie. (R)
22. I worked at the garden. I watered the flowers flat. (R)
23. I bought new socks because I wore my socks ragged. (R)
24. I rented my apartment furnished because I might stay for a short time.(D)
25. As soon as I finished cooking, I brought my lunch hot. (D)

Appendix 2: Materials for Experiment 2

Q: What did you do?
1. I vacuumed, scrubbed and wiped the windows clean
2. I baked potatoes, made a salad and cooked the steak tender
3. I swept the floor, cleaned the counter and sponged the table clean
4. At my friend's party, I sang, drank and danced my feet sore
5. I sewed, ironed and washed my cloth white
6. At the beauty's shop, I trimmed my nails, pierced my ears and dyes my hair blonde

Appendix 3: Materials for Experiment 3

1. Yesterday I fed some milk to my dog, by accident. And imagine this: He liked it.
    My dog licked his plate clean (resultative)
2. When I went for work, I was too busy to feed my dog in the morning. I remember that he had
    nothing to eat. He must be hungry. When I came back in the evening, I saw that my dog
    licked his plate clean. (depictive)
3. What did you do?
    You rode my horse tired!
    I told you that you should not exert it too much. (resultative)
4. What did you do?
    You rode my horse tired!
    I told you to check whether it had had enough rest, before you go out on a ride. (depictive)
5. I know a man who was very rich. He had several mansion and card. But, he hardly changed
    his clothes. He kept wearing the same old pants until they are riddled with holes. He wore his
    socks ragged. (resultative)
6. He dresses like a model, wearing a new suit and a new tie. But, what happened yesterday?
    I saw that inside his new shoes, he wore his socks ragged. (depictive)