



Aspectual Coercion and the Complementation of Aspectualizers in English

Tünde NAGY

Sapientia University
Department of Humanities
tundenagy1@yahoo.com

Abstract. In the paper I intend to give an insight into the phenomenon of coercion and how this is manifested in the case of aspectualizers in English. The phenomenon of coercion plays an important role in aspectual complementation, and as such also in the complementation of aspectualizers whenever there is a clash between the aspectual category of an aspectualizer and that of the complement verb. I will give examples of coercion by aspectualizers describing the beginning of an event (*'begin', 'start'*), continuation (*'continue', 'keep', 'go on'*), and also final part of a situation (*'end', 'finish'*)—also pointing to cases where aspectual complementation lacks the phenomenon of coercion. Coercion often leads to ambiguous sentences; in order to disambiguate the meaning of such constructions it is also necessary to apply to some extra-linguistic world knowledge in addition to a semantic analysis.

Keywords: coercion, aspectualizers, aspectual complementation, extra-linguistic world knowledge

Introduction

The paper gives an insight into the complementation of aspectualizers in English pointing to the importance that coercion plays in this process. The term 'aspectualizer' will be borrowed from Freed and also Brinton to describe those verbs that refer either to the beginning (e.g. *begin, start*), continuation (e.g. *continue, keep*) or final part of a situation (e.g. *end, finish*). These verbs have been

given a variety of names over the years; they have been referred to as ‘begin-class verbs’ and also ‘aspectual verbs’ (Newmeyer), ‘aspectual complement verbs’ (Dowty), ‘aspectual auxiliary verbs’ (Binnick), ‘phasal verbs’ (Michaelis). As it will be shown coercion plays an important role by the complementation of these verbs not only in case they are followed by primitive nouns but also when they take non-finite complement constructions (*to*-infinitive and *-ing*).

Example will be given also of cases where coercion is blocked by the presence of a certain element in the sentence. Unless the semantic clash between the verb and its argument is resolved the sentence results as ungrammatical.

The notion of coercion

Construal plays an important role in the complementation of aspectualizers in English. A special type of construal named aspectual coercion is an important process involved in the complementation of these verbs. Aspectual coercion exists whenever there is a conflict between the verb and its complement, between the aspectual character of the eventuality type and the aspectual constraints of some other element in the sentence and where this semantic clash would lead to ungrammaticality (de Swart 360). Coercion operators can be of various types (e.g. transitions like inchoativity, habituality) and can express both the coercion of a state into an event reading (as in sentence 1)) and that of an event into an ongoing reading (sentence 2)); events can also be coerced into states, by giving a sentence an iterative or habitual reading (sentence 3)):

- 1) Suddenly, I knew the answer. (de Swart 359)
- 2) I read a book for a few minutes. (de Swart 359)
- 3) For months, the train arrived late. (de Swart 359)

Most of the linguists agree that aspectual coercion is a semantic phenomenon. De Swart (359) defines coercion as a contextual reinterpretation with no explicit morphological or syntactical markers. Todorova et al. (523) also note that the effects of coercion are purely semantic, so that ‘the operation does not have any morphological reflex’.

The phenomenon of aspectual coercion brings about some important semantic changes within a sentence; these changes affect mainly the semantic type of the complement construction. Through coercion the default event type of a linguistic construction (i.e. that of the complement) is changed to a different event type (Hindsill 38). As a result of this the verbal predicate receives another semantic interpretation, different from its original aspectual reading (Todorova et al.).

Coercion, as a syntactically and morphologically invisible phenomenon is understood to be governed by contextual reinterpretation mechanisms triggered by

the need to resolve aspectual conflict (de Swart). Since it often results from the combination of all the words in a sentence (Jackendoff), coercion is often understood to be compositional and as such is analyzed at the level of the entire sentence (de Swart).

In the interpretation of coercion context also plays an important role. Coercion can lead to ambiguities and polysemous readings or can preserve the ambiguity already existent in the sentence (Jackendoff). This is the case especially by isolated sentences which are often ambiguous, e.g. between a series and generic reading. In order to resolve this ambiguity a larger context is necessary since in such cases only a larger context can help the reader (listener) to decide for one of the possible readings. A good example of this are sentences 4-5). In sentence 4) ‘sleep’ has a continuous reading (referring to one night) in sentence 5) the same predicate receives an iterative meaning referring to multiple acts of sleeping and also multiple nights.

- 4) Sue slept all night. (Jackendoff 391)
- 5) Sue slept all night until she started drinking too much coffee.
(Jackendoff 391)

Besides context which is of a great importance in such cases, world knowledge is also necessary for the interpretation of coerced sentences (de Swart). Very often, for the interpretation of a sentence the hearer needs some extrinsic contextual clue (i.e. sentence 50) can hardly be interpreted without some extralinguistic information).

Coercion in aspectual complementation

The most frequent discussions on aspectual coercion focus on cases where aspectualizers are complemented by Noun Phrase (NP) complements, especially primitive nouns. An important task in such cases is to explain why certain aspectualizers allow for a certain primitive noun as their complement (i.e. sentence 6, 7) but disallow other primitive nouns (i.e. sentences 8-14).

- 6a) John began the job. (Newmeyer 42)
- 6b) John began the pizza. (Newmeyer 58)
- 7) Jane started / continued / stopped the concert / the conversation / the affair.
(Ter Meulen and Rooryck 461)
- 8) *John began the book. (Pustejovsky & Bouillon 153)
- 9) * Mary began the highway. (driving on) (Pustejovsky and Bouillon 136)

-
- | | | |
|---------------------------------|---------------|--------------------------------|
| 10) *John began the dictionary. | (referencing) | (Pustejovsky and Bouillon 136) |
| 11) * I finished the symphony. | (listening) | (Pustejovsky and Bouillon 142) |
| 12) * I finished chocolate. | (eating) | (Pustejovsky and Bouillon 142) |
| 13) * John stopped the book. | | (Pustejovsky and Bouillon 143) |
| 14) * Madame stopped the tea. | | (Pustejovsky and Bouillon 143) |

According to Pustejovsky and Bouillon (Aspectual Coercion) the ungrammaticality of sentences 8-14) can be explained by the qualia nature of the NP complement as well as the semantics of the respective aspectualizer. The qualia structure of a certain construction is defined to contain the definitional properties of a construction (Johnston and Busa), that is, all the semantic information characteristic of the construction including the way the construction is conceptualized.¹ In order to be part of a construction the qualia structure associated with a certain NP complement must be in accordance with the semantics of the aspectualizer.

Aspectualizers often require an event as their complement (Pustejovsky and Bouillon); as a consequence, they usually take such NP constructions that have an eventive (transitional event) interpretation. Considering the sentences 6-7) again, because of the eventive interpretation they may receive (the predicates in these sentences are understood to entail certain goal orientation, e.g. *doing a certain job*, *eating the pizza* in sentences 6a) and 6b); in sentence 7) the NPs also denote events or “in some temporal sense extended objects with internal change” (ter Meulen and Rooryck 461) the sentences result as grammatical. By contrast, in sentences 8)-14) the NPs are usually associated with activities without any goal orientation to be detected; in this case, the semantics of the NPs is in clash with the event type of the verb and this semantic incongruity leads to ungrammatical sentences.

The acceptability of a certain NP with an aspectualizer seems to be more complicated as Pustejovsky and Bouillon (Aspectual Coercion) illustrate since the qualia structure alone does not explain why an NP complement is allowed in certain cases but disallowed in other. According to Pustejovsky and Bouillon the acceptability versus non-acceptability of an NP construction with a certain aspectualizer is closely related to the ambiguous character of aspectualizers. Some

¹ Pustejovsky (The Generative Lexicon) defines qualia structure as containing four aspects of word meaning. These are manifested by four roles, which are:

- formal role: which distinguishes a word within a larger domain
- constitutive role: reflects the re relation between lexical items and their constitutive parts
- telic role: defining the purpose or goal of the construction
- agentive role: giving information about whatever brings it about

aspectualizers (i.e. *begin* but not *finish*) can have both a raising and a control meaning depending on the context in which they appear (Newmeyer).

Sentence 15) illustrates the use of *begin* as control verb, sentence 16), by contrast, the use of *begin* as a raising verb. An important difference between the two sentences is that while in sentence 15) *begin* appears as complement of ‘force’ (*begin* has a control sense) in sentence 16) the appearance of *begin* as complement of ‘force’ is blocked (the sentence contains the raising sense of *begin*).²

15) Mary forced John to begin writing his thesis. (Pustejovsky and Bouillon 144)

16) *Mary forced it to begin raining yesterday. (Pustejovsky and Bouillon 144)

Further examples of the control-raising ambiguity of begin-class verbs are sentences 17) (control meaning of *begin*: the possibility of agentive nominalization) and sentence 18) (the raising sense of *begin* where *begin* is intransitive and subject embedding):

17) John is a beginner. (Newmeyer 41)

18) The sermon began. (Newmeyer 56)

Pustejovsky and Bouillon (Aspectual Coercion) argue that when an aspectualizer has a control sense it only allows for an NP complement that has in its qualia structure the meaning of a transitional event; this also means that when an NP does not refer to a transitional event (does not have in its qualia the sense of a transitional event) it cannot appear as complement of a control verb (consider for example the ungrammaticality of sentences 9) and 10); by contrast, the raising sense of an aspectualizer allows for any eventuality type as its complement.

In order to explain the appearance vs. non-appearance of an NP complement with a certain aspectualizer Newmeyer (43) introduces the category of C.A. verbs (‘continuing activity verbs’); these verbs are defined as ‘non-instantaneous verbs and non-perceptual verbs over which the subject has conscious control’. The group of C.A. verbs contains such verbs as ‘eat’, ‘cook’, ‘read’, ‘write’, ‘swim’, ‘dance’, ‘act’, ‘study’, ‘sing’ and ‘play’. Newmeyer (45) shows that aspectual verbs behave like C.A. verbs in many respects (e.g. passivization, middle voice formation, impossibility of *there* insertion-sentences 19-24). Due to the similarity they share, aspectualizers only allow for such NP constructions that can be associated with a C.A. reading. According to this interpretation sentence 25) with the NP complement *dinner* only allows the reference to such verbs as ‘cook’ (*began cooking dinner*) or ‘eat’ (eating dinner) but not ‘smell’ (**began smelling dinner*) or ‘enjoy’ (**began enjoying dinner*).

² On the control-raising meaning of aspectual verbs see Newmeyer.

-
- 19) The cake was eaten by John. (Newmeyer 46)
 - 20) Dinner was begun by Tony. (Newmeyer 46)
 - 21) The novel reads easily. (Newmeyer 46)
 - 22) The novel begins easily. (Newmeyer 46)
 - 23) *There ate a boy. (Newmeyer 46)
 - 24) *There began a story. (Newmeyer 46)
 - 25) Mary began dinner. (Newmeyer 43)

Dixon (172) in his study on aspectual verbs also notes that only such verbs can be omitted after aspectualizers that are concerned with making, preparing or performing such as ‘cook’, ‘knit’, ‘tell’, or verbs concerned with consumption such as ‘read’, ‘eat’, ‘drink’. In all cases, the NP should be a typical object of the omitted verb, so that the meaning of the verb could be inferred from it (sentences 26) and 27).

- 26) He began (cooking) the supper, she began (knitting) a sweater. (Dixon 172)
- 27) I started (reading) *Great Expectations* last night, John began (eating) the chocolate cake. (Dixon 173)

Finally, it must be noted that the nature of the NP complement (mass vs. count) as well as the type of the predication (static: individual level predicates and dynamic: stage-level predicates) also have a great importance in the complementation of aspectual verbs. Pustojevsky and Brillon (*Aspectual Coercion*) point out that countable NPs are more acceptable with aspectualizers than uncountable NPs and bare plurals; when the complement NP contains a mass noun or an unspecified plural NP the sentence often results as ungrammatical (e.g. sentence 28); by contrast, when the quantity of the complement NP is specified the sentence is grammatical (e.g. sentence 30)).

Aspectual verbs seem to differ with respect to their appearance with mass nouns or plural NPs. While bare plurals or mass noun NPs appear with dynamic aspectual verb e.g. *stop* receiving a generic interpretation (sentence 31)), such NPs are unacceptable with static verbs such as *continue* and *keep* (sentence 32)). This shows that the mass noun vs. count noun distinction works differently with each aspectualizer in turn.

- 28) * John began cheese (eating). (Pustejovsky 708)
- 29) John began the cheese (eating) / the book (reading). (Pustejovsky 707)
- 30) Jane started / continued / stopped her book / a drawing.
(ter Meulen & Rooryck 461)
- 31) Jane stopped poetry / books / concerts / affairs. (ter Meulen & Rooryck 461)
- 32) Jane *continued/ *kept poetry / books / concerts / affairs.

(ter Meulen & Rooryck 461)

Concerning the distinction between static and dynamic predicates Ter Meulen and Rooryck argue that dynamic aspectual verbs only take stage-level predicates (expressing temporary properties of individuals), and do not normally appear with static individuals (expressing permanent properties). They note that singular object NPs denoting static individuals are only acceptable if the NP denotation is conceived as a theme. Example of this is sentence 29).

The non-finite complementation of aspectualizers

Coercion is also present in case the aspectualizer is followed by a non-finite complement and the semantics of the complement construction (its eventuality type) differs from that of the aspectualizer; in such cases a recategorization takes place where the eventuality type of a construction (that of the complement construction) is coerced into another eventuality type. This is in accordance with Hindsill's definition of coercion; he defines coercion as the change from a default event type associated with a given Verb Phrase (VP) to a different event type (38).

Example of coercion are sentences 33-41), where the aspectualizer *begin* coerces the eventuality type of activity verb 'to bleed' (sentence 33) and of the state verbs 'to be ill' and 'to be annoyed' (sentences 34 and 35 respectively) into an eventive interpretation by expressing their moment of initiation. In sentence 36) the progressive coerces the eventuality type into an activity; in this case the focus is laid on the preparatory phase that leads to the initiation of the event. Sentence 37) is also recategorized as an activity as 'beginning to fall' receives an iterative interpretation. Other examples of coercion are sentences 38-41): in sentence 38) the coercion between *keep* and 'be ill' results either in a generic or a series meaning (similar is the case with *stop* in sentence 39); here *stop* can refer either to a single occasion or a habitual activity).

Sentences 40) and 41) show the appearance of *finish* with the accomplishment 'build a house'. The function of *finish* seems to differ in the two sentences. That is, although *finish* usually shifts the complement type into an achievement (which also happens in sentence 40) where the complement verb has an achievement interpretation) in sentence 41) *finish* preserves the integrity of the complement event (sentence 41) is and stays an accomplishment).

- 33) John is beginning to bleed. (Pustejovsky and Bouillon 144)
- 34) John is beginning to be ill. (Pustejovsky and Bouillon 145)
- 35) John is beginning to be annoyed by the noise. (Pustejovsky and Bouillon 144)

-
- 36) The war is beginning to reach Bosnia. (Pustejovsky and Bouillon 144)
 37) Snow began to fall last night. (Pustejovsky and Bouillon 144)
 38) John kept being ill. (Hindsill 39)
 39) John stopped running. (Hindsill 40)
 40) Mary finished building the house in 3 months.
 (Pustejovsky and Bouillon 155)
 41) Mary finished building the house at 3:00 pm yesterday.
 (Pustejovsky and Bouillon 155)

Lack of coercion in aspectual complementation

There are also cases where coercion does not take place in a sentence; this may be due to several factors, like the mismatch between the semantic structure of the aspectualizer and the semantics of the complement verb. Sentence 42a) with the achievement verb ‘arrive’ does not undergo coercion since the instantaneous character of ‘arrive’ is not resolved in the sentence; in sentence 42b) however, the plural NP ‘the guests’ makes the sentence grammatical since in this case the situation acquires a certain durativity and the sentence is coerced into an activity reading. In sentences 43) and 44) the complement verbs are state verbs; the sentences are ungrammatical as most of the states are unbound and can neither be finished, completed or continued repeatedly. Similar is the case with sentences 45) and 46) where the complement constructions would receive a bounded state interpretation and this is blocked both in the case of *start* (sentence 45) and *stop* (sentence 46) (Michaelis 94).

Coercion can be blocked in a sentence by other additional constructions as well (e.g. an adverbial phrase). So is the case in sentence 47) where the specified plural noun ‘the six errors’ is compatible with *finish* but cannot co-occur with *stop* and *quit* because this would imply that John stopped before the errors were found (yet an unspecified plural noun would be acceptable in this case, e.g. *John stopped/quit finding errors*). Sentences 48) and 49) represent an interesting case. The sentence *John kept Bill working* can be right or wrong depending on the presupposition expressed by the sentence. Due to the fact that ‘keep’ is non-factive in this case (it does not presuppose the truth of the event expressed by the complement) the sentence is ungrammatical if the truth of the sentence is presupposed (sentence 48)) but correct if the fact that Bill worked is not presupposed (sentence 49)).

- 42a) *John began to arrive. (Newmeyer 35)
 42b) The guests began to arrive. (Newmeyer 35)
 43) *John finished/ *completed liking rock music. (Brinton 87)

- 44) *He keeps resembling his brother. (Brinton 87)
 45) *Henry started to be happy when he heard the news. (Michaelis 93)
 46) *Harry stopped living in Japan in 1970. (Michaelis 94)
 47) John *stopped / *quit / finished finding the six errors in the paper. (Brinton 86)
 48) *John kept Bill working. (it is presupposed that Bill worked) (Newmeyer 55)
 49) John kept Bill working. (it is not presupposed that Bill worked) (Newmeyer 70)

The importance of world knowledge in the interpretation of aspectual complementation

In the interpretation of aspectual complementation world knowledge plays an important role. That is, although the sentences 50-55) below sound strange and might be ruled out by some native speakers they may be acceptable in certain contexts depending on the conceptualization of the speaker.

Hindsill (31) calls the examples in 50) and 51) attempted series (attempted series are such constructions that need a larger context for their interpretation). According to Hindsill these sentences can be understood as a series of understanding events and loving events respectively (the situation in sentence 50) can receive an event interpretation (e.g. *John tried to convince himself that he didn't speak French, however, whenever a French person talked to him, he understood French*).

Similar is the case with sentence 51) which can also be understood as a series of loving events (e.g. *John tried not to love her, but whatever he did, he still continued loving her*).

With respect to the other sentences, we can say that sentence 52) is strange since 'running a mile' is an accomplishment and 'stop' usually appears with activity verbs; still the sentence is acceptable if we imagine that John intended to run a mile but stopped running before the required mile was done. The ungrammaticality of sentence 53) is explained by Michaelis with respect to causation as being due to a mismatch between the inceptive aspectualizer (*start*) and the continuous causation expressed by the sentence: that is, the outburst of chuckling temporally overlaps the causal situation (watching the dance performance) rather than following it. Sentences 54) and 55) are also odd since *finish* usually takes animate subjects and requires that the subjects take part in the event expressed by the complement; this condition is not fulfilled in these sentences since they contain inanimate subjects.

-
- 50) ?John kept understanding French. (Hindsill 39)
 51) ?John kept loving Mary. (Hindsill 39)
 52) ?John stopped running a mile. (Hindsill 27)
 53) Mom watched our dance performance and ?started chuckling merrily. (Michaelis 96)
 54) ?The leaves have finished falling. (Pustejovsky and Bouillon 155)
 55) ?The paint has finished drying. (Pustejovsky and Bouillon 155)

Besides these sentences which are marginally acceptable there are also other sentences which are ambiguous between a generic and series reading or between an intentional and a non-intentional reading. For the interpretation of such sentences world knowledge as well as the hearer's conceptualization (and also context) are of a great importance.

The sentences below are ambiguous between a generic and a series reading. Thus, sentence 56) can be understood either as referring to a single sickness that lasts (generic reading) or to getting sick repeatedly (series reading). Sentence 57) also has a certain ambiguity; without further context we don't know whether we talk about one crossing and Bill was on his way to the other side of the street (generic reading) or he crossed the street repeatedly (series reading). Finally sentence 58) is ambiguous between an activity and an accomplishment reading; the sentence could mean either that John stopped reading the book entirely (with the intent not to read from it anymore) or that he stopped reading it for the rest of the day with no particular goal in the mind (Hindsill).

- 56) John keeps being ill. (Hindsill 40)
 57) Bill kept crossing the street. (Jackendoff 391)
 58) John stopped reading the book. (Hindsill 27)

Sentences can also be ambiguous with respect to intentionality and non-intentionality (consider sentences 59-63). Sentence 59) has a habitual reading; the need for coercion in this case is due to the fact that *keep* requires an ongoing unbounded process as its complement, and 'to drop something' is bound. The sentence is ambiguous between an intentional and non-intentional meaning: it could mean either that Bill dropped things intentionally or that Bill dropped his things accidentally. In sentence 60) the ambiguity between the two readings remains; this ambiguity is resolved only in sentence 61) where the higher and the lower verb share the same subject.

Sentences 62) and 63) are also ambiguous between intentional and non-intentional readings. Considering sentence 62) we don't know if John started losing weight on purpose (by keeping diet) or he has a sickness, as a consequence of which he is losing weight. Similarly, sentence 63) can be interpreted in two ways.

In the first interpretation John is seen as an acting agent who begins his work intentionally; in the second interpretation John is seen more like a passive subject, with no intention of his own to start work.

According to Pustejovsky and Bouillon (On the Proper Role of Coercion) the ambiguity of such cases can be explained by the presence of both a control and a raising meaning in the case of certain aspectualizers (i.e. *begin*).

- 59) Bill kept dropping things. (Newmeyer 36)
- 60) I made Bill keep dropping things. (Newmeyer 37)
- 61) Bill made himself keep dropping things. (Newmeyer 37)
- 62) John began to lose weight. (Pustejovsky and Bouillon 709)
- 63) Zeke began to work. (Newmeyer 27)

Conclusion

As the data show, aspectual coercion is a complex phenomenon which involves not only grammatical and syntactic factors but also requires some extra-linguistic world-knowledge. That is, certain sentences are only interpretable if a larger context is given. Sentences that are found as ungrammatical by some speakers might become acceptable in a proper context.

The paper can be considered an attempt to give an overview of aspectual coercion and its importance by the complementation of aspectualizers in English. Many of the issues presented need further investigation. Also additional data are necessary for further conclusions to be drawn.

Works cited

- Binnick, Robert. *Time and the Verb. A Guide to Tense and Aspect*. Oxford: OUP, 1991.
- Brinton, Laurel. *The Development of English Aspectual Systems*. Cambridge: CUP, 1988.
- De Swart, Henriette. "Aspect Shift and Coercion." *Natural Language and Linguistic Theory* 16/2 (1998): 347-85.
- Dixon, R.M.W. *A Semantic Approach to English Grammar*. Second Edition. Oxford: OUP, 2005.
- Dowty, R. *Word Meaning and Montague Grammar: the Semantics of Verbs and Times in Generative Semantics and in Montague's PTQ*. Dordrecht: D. Reidel, 1979.
- Freed, Alice. *The Semantics of English Aspectual Complementation*. Dordrecht: D. Reidel, 1979.

- Hindsill, L. Darrin. *It's a Process and an Event. Perspectives in Event Semantics*. Dissertation, Amsterdam: ILLC Publications, 2007.
- Jackendoff, Ray. *Foundations of Language. Brain, Meaning, Grammar, Evolution*. New York: Oxford UP, 2002.
- Johnston, Michael, and Federica Busa. "Qualia Structure and the Compositional Interpretation of Compounds." *Proceedings of the ACL SIGLEX workshop on breadth and depth of semantic lexicons*, 1996. 77-88.
- Michaelis, Laura. *Aspectual Grammar and Past-Time Reference*. London: Routledge, 1998.
- Newmeyer, Frederick J. *The English Aspectual Verbs*. The Hague: Mouton, 1975.
- Perlmutter, David M. "The Two Verbs begin." R.A. Jacobs, and Peter S. Rosenbaum (eds.). *Readings in English Transformational Grammar*. Waltham, Mass: Blaisdell, 1970. 107-19.
- Pustejovsky, James, and Pierrette Bouillon. "Aspectual Coercion and Logical Polysemy." Boguraev Branimir (ed.). *Lexical Semantics: The Problem of Polysemy*. Oxford: Clarendon, 1996. 133-162.
- . "On the Proper Role of Coercion in Semantic Typing." *Proceedings of the 15th conference on Computational linguistics—Vol. 2*, 1994. 706-711
- Pustejovsky, James. "The Generative Lexicon". *Computational Linguistics* 17.4 (1991): 409-41.
- Ter Meulen, Alice, and Johan Rooryck. "The Quantification Force of Static and Dynamic Predication." *Proceedings of the 10th West Coast Conference on Formal Linguistics*, 1992. 459-69.
- Todorova, M., et al. "Aspectual Coercion and the Online Computation of Sentential Aspect." *Proceedings of the Twenty-Second Annual Conference of the Cognitive Science Society*. U of Pennsylvania. Philadelphia: Lawrence Erlbaum Associates, 2000. 523-528.