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GKC 1910 = Kautzsch, Emil (ed.). 1910. *Gesenius' Hebrew grammar*. Trans. by Arthur E. Cowley. Oxford: Clarendon.
Joüon, Paul, and Takamitsu Muraoka. 1991. *A grammar of Biblical Hebrew*. Rome: Pontifical Biblical Institute.
Kedar-Kopfstein, Benjamin. 1977. "Semantic aspects of the pattern *Qôṭēl*". *Hebrew Annual Review* 1:155–176.
——. 1981. "Die Stammbildung *qôṭel* als Übersetzungsproblem". *Zeitschrift für die Alttestamentliche Wissenschaft* 93:254–279.

Stephen J. Andrews
(Midwestern Baptist Theological Seminary)

Dependency Grammar

Dependency Grammar is a type of linguistic theory that builds syntactic structure on the dependency relation between two words. Although the approach can be traced back to linguists of antiquity, the original formulation of the formal theory is that of Tesnière (1959). Lucien Tesnière was a French linguist, and a member of the so-called Prague School of Linguistics. The dependency relation is an asymmetrical relation between two words, one of which (the Head) exhibits a host of local control phenomena with respect to another word (the Dependent). Heads determine the syntactic and semantic features of the head-dependent combination, so that in most cases the combination inherits the features of the head-word. For example, a modified noun such as 'big chair' is a nominal just like 'chair' as far as its semantics and its syntactic combinatory behaviour are concerned. Second, heads control the characteristics and placement of their dependents: for example, the transitive verb 'saw' in the English clause 'Mary saw Richard' requires a pre-verbal subject nominal complement ('Mary') and a post-verbal direct object ('Richard'). According to theory, the syntactic structure of a sentence is built up from such pairwise dependency relations between individual pairs of words, applied recursively.

In contrast to Phrase- or Constituency-Structure theories of linguistic structure, Dependency Grammars do not employ units larger than words in characterizing sentence structure. The binary Dependency relation between pairs of words is the atomic building block of syntax, and larger units built up from it do not require explicit acknowledgement.

The grammars belonging to this family include Tesnière's (1959) original formulation of Dependency Theory; Melčuk's Meaning-Text Theory (1979; 1988); Hudson's Word Grammar (1984; 1990); Sgall's Functional Generative Description (Sgall et al. 1986) and Starosta's Lexicase (1988). Lately, Chomskian grammar has joined the class of Dependency Grammars. In the Minimalist Program, Chomsky (1995) defines as the major building block of syntactic structure the asymmetrical operation Merge that creates a new syntactic unit from the unification of two old ones; this operation is identical to the Dependency relation. The convergence between Chomskian linguistics and Dependency Grammars has been pointed out by linguists of the two schools of thought (e.g., Hudson 1995; Epstein et al. 1998; Epstein 1999).

Grammatical relations such as Subject-Verb and Verb-Direct Object are subtypes of the general Head-Dependent relation, each representing a concrete and embodied expression of the abstract Dependency relation. Thus, grammars that allocate a formal role to grammatical relations belong, at least implicitly, to the family of Dependency Grammars. This includes the pre-theoretical so-called 'traditional grammar'.

Dependency-type analyses are the dominant mode of grammatical analysis adopted in descriptions of Hebrew grammar. First, the great majority of Semitic linguists studying the structure of Hebrew (e.g., Perez 1951; Blau 1966; Yoeli 1970; Ben-Asher 1972; Rosén 1977; Ornan 1979; Goldenberg 1985) explicitly acknowledge binary grammatical relations between a Head element such as the verb and a dependent element such as its subject or direct object. Notions such as 'obligation' of the dependent vis-à-vis the Head form part of the descriptive apparatus of syntactic structure in the traditional literature. The same approach informs textbooks on modern Hebrew grammar (e.g., Glinert 1989) and it is the mode of analysis employed even in elementary textbooks on Hebrew syntax. For instance, Avikazar (1982:64–69) defines the relation of complementation by which such elements as subject and direct object obligatorily or optionally complement their 'nucleus'

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(namely, Head). In his textbook, high-school pupils are instructed to mark the relevant relations between pairs of words of a sentence by arrows, in a typical Dependency notation.

In the field of developmental psycholinguistics, most researchers working on the development of Hebrew in children use grammatical relations as formal units of analysis, thus at least implicitly embracing a Dependency-type grammar without identifying their work as belonging to the Dependency tradition (e.g., Berman 1980). An explicit call to adopt Dependency Grammar as the theoretical framework for studying language acquisition, and in particular in Hebrew, was made by Ninio (1996). In subsequent studies, Ninio (1998; 2006) has explored the syntactic development of Hebrew-speaking children from a Dependency Grammar perspective and performed Dependency analysis on several maternal and longitudinal child corpora.

Dependency Grammar proper is slowly gaining a foothold in linguistic analyses of Hebrew. Some recent theses employed this framework as their methodology, such as Malessa's (2006) PhD thesis on Biblical Hebrew, carried out in the Netherlands.

Another recent development is the use of dependency analysis for the construction of natural language processing (NLP) applications such as the building of automatic parsers. Projects such as these relating to Hebrew are in their initial phases, some published results representing a trial run on a small corpus (Goldberg and Elhadad 2009; 2010), other publications are announcements of future plans to develop such parsers (Nir et al. 2010). When these projects are completed, the availability of easy methods of parsing is likely to increase the number of corpus-based linguistic studies of Hebrew.

References

Avikazar, Ami. 1982. *Taẋbir ve-šiẋbur la-tixon*. Ramat-Gan: Nofer.

Ben-Asher, Mordechai. 1972. *ʿIyunim ba-taẋbir ha-ʿIvrit ha-ẋadaša*. Tel-Aviv: Hakibbutz Hameuchad.

Berman, Ruth. 1980. "The case of an (S)VO language". *Language* 56:759–776.

Blau, Joshua. 1966. *Yesodot ha-taẋbir*. Jerusalem: Ha-machon ha-ʿIvri le-haskala bi-ktav be-Yiśrael, ha-ʾUniversita ha-ʿIvrit.

Chomsky, Noam. 1995. *The Minimalist Program*. Cambridge, Massachusetts: MIT Press.

Epstein, David. 1999. "Un-principled syntax: The derivation of syntactic relations". *Working minimalism*, ed. by David Epstein and Norbert Hornstein, 317–345. Cambridge, Massachusetts: MIT Press.

Epstein, David, Erich Groat, Ruriko Kawashima, and Hisatsugu Kitahara. 1998. *A derivational approach to syntactic relations*. Oxford: Oxford University Press.

Fraser, Norman. 1994. "Dependency Grammar". *Encyclopedia of Language and Linguistics*, ed. by Ronald Asher and Seumas Simpson, 860–864. Oxford: Pergamon.

Glinert, Lewis. 1989. *The grammar of Modern Hebrew*. Cambridge: Cambridge University Press.

Goldberg, Yoav and Michael Elhadad. 2009. "Hebrew dependency parsing: Initial results". *Proceedings of the 11th International Conference on Parsing Technologies (IWPT'09), 7–9 October 2009*. Paris: The Association for Computational Linguistics.

——. 2010. "Easy first dependency parsing of Modern Hebrew". *Proceedings of the NAACL HLT 2010 First Workshop on Statistical Parsing of Morphologically-Rich Languages*, 103–107. Los Angeles: The Association for Computational Linguistics.

Goldenberg, Gideon. 1985. "'Al torat ha-poʿal ve-ha-poʿal ha-ʿIvri". *Meẋqarim ba-lašon 1*, ed. by Moshe Bar-Asher, 295–348. Jerusalem: The Hebrew University of Jerusalem Press.

Hudson, Richard. 1984. *Word Grammar*. Oxford: Blackwell.

——. 1990. *English Word Grammar*. Oxford: Blackwell.

——. 1995. *Word meaning*. London: Routledge.

Malessa, Michael. 2006. *Untersuchungen zur verbalen Valenz im biblischen Hebräisch* (Studia Semitica Neerlandica 49). Assen: Van Gorcum.

Melčuk, Igor. 1979. *Studies in Dependency Syntax*. Ann Arbor, Michigan: Karoma.

——. 1988. *Dependency syntax: Theory and practice*. Albany: State University of New York Press.

Ninio, Anat. 1996. "A proposal for the adoption of dependency grammar as the framework for the study of language acquisition". *Volume in honor of Shlomo Kugelmass*, ed. by Gershon Ben Shakhar and Amia Lieblich, 85–103. Jerusalem: Magnes.

——. 1998. "Acquiring a dependency grammar: The first three stages in the acquisition of multiword combinations in Hebrew-speaking children". *Language acquisition and developmental psychology*, ed. by Grażyna Makiello-Jarza, Jan Kaiser, and Magdalena Smolczynska, 201–210. Krakow: Universitas.

——. 2006. *Language and the learning curve: A new theory of syntactic development*. Oxford: Oxford University Press.

Nir, Bracha, Brian MacWhinney, and Shuly Wintner. 2010. "A morphologically-analyzed CHILDES corpus of Hebrew". *Proceedings of the seventh international conference on Language Resources and Evaluation (LREC-2010), Malta, May 2010*, 1487–1490. Malta: European Language Resources Association.

Ornan, Uzzi. 1979. *Ha-mišpaṭ ha-pašuṭ*. Jerusalem: Academon.

Perez, Itzhak. 1951. *Taẋbir ha-lašon ha-ʿIvrit*. Tel-Aviv: Masada.

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Rosén, Haiim. 1977. *ʿIvrit ṭova: ʿIyunim be-taẋbir*. Jerusalem: Kiryat Sefer.
Sgall, Petr, Eva Hajičová, and Jarmila Panevová. 1986. *The meaning of the sentence in its semantic and pragmatic aspects*. Dordrecht: Reidel.
Starosta, Stanley. 1988. *The case for Lexicase*. London: Pinter.
Tesnière, Lucien. 1959. *Eléments de syntaxe structurale*. Paris: Klincksieck.
Yoeli, Mordechai. 1970. *Taẋbir ʿIvri*. Tel-Aviv: Yesodot.

Anat Ninio
(The Hebrew University of Jerusalem)

Derivation

Derivation in morphology refers to the process through which a new word is created by means of an alteration in form or structure. It differs from inflection, in which a word may be changed but no new lexical entry is formed (Dressler 1989). For instance, *movement* is derived from *move* by the addition of *-ment* and both words are listed in the lexicon, whereas the addition of *-s* to *move* or to *movement* (i.e., *moves, movements*, respectively) does not involve the creation of new words (→ Inflection).

Derivation differs from inflection in a number of ways, a few of which will be mentioned here: (1) derivation forms new lexical items; (2) derivation is arbitrary within the rules of the language; there is no way to determine *a priori* which of the derivational devices will be chosen for the creation of a new word; (3) derivation can proceed in a number of different ways (to be listed below), whereas inflection is mostly linear; (4) derivation uses independent as well as bound morphemes, whereas inflection involves only bound morphemes; (5) the set of derivational morphemes is open, whereas the number of inflectional morphemes is fixed; (6) derivation changes a lexical item's morphological category or its basic semantic classification, while there is no such change in inflection; (7) unlike inflection, derivation is not determined by syntax (Dressler 1989; Schwarzwald 1998; 2002:units 5–6).

Words in Modern Hebrew are derived primarily in two ways, root-and-pattern and linear formation (Ornan 1983; 2003; Ravid 1990; Nir 1993; Schwarzwald 1998; 2002:unit 4; Bolozky 1999) (→ Word Formation for more details and different views).

1. Root and pattern derivation

This method involves combination of a discontinuous consonantal root with a discontinuous vocalic pattern, at times with added consonants and vowels (the so-called משקל *mišqal* for nouns and adjectives, בניין *binyan* for verbs; → *Mishqal*, Binyanim) as in:

גדול *gadol* 'big(adj)' < גד"ל *g-d-l* + *CaCoC*, גידל *gidel* 'to raise' < *g-d-l* + *CiCeC* (*piʿel*), מגדל *migdal* 'tower(m)' < *g-d-l* + *miCCaC*, הגדלה *hagdala* 'increase(f)' < *g-d-l* + *haCCaCa*, הגדיל *higdil* 'to increase' < *g-d-l* + *hiCCiC* (*hifʿil*), גודל *gódel* 'size(m)' < *g-d-l* + *CóCeC*, גידול *gidul* 'tumor(m)' < *g-d-l* + *CiCuC*, גדולה *gdula* 'greatness(f)' < *g-d-l* + *CCuCa*, מגודל *megudal* 'grown up, big' < *g-d-l* + *meCuCaC*.

2. Various types of linear formation

The most common linear formation is suffixation of a bound morpheme to a stem; however, prefixation occurs as well:

Bound morpheme suffix. פרדסן *pardesan* 'citrus grower' < פרדס *pardes* 'orange grove' + *-an* (attributive or occupational suffix), פרדסנות *pardesanut* 'citrus growing' < פרדסן *pardesan* + *-ut*; מלכותי *malxuti* 'royal' < מלכות *malxut* (< מל"כ *m-l-k* + *CaCCut*) 'kingdom' + *-i* (adj suffix), מלכותיות *malxutiyut* 'majesty' < מלכותי *malxuti* + *-ut* (abstract nominal suffix); בנקאי *banqay* 'banker' < בנק banq 'bank' + *-ay* (attributive or occupational suffix).

Prefixation. באמת *be-ʾemet* 'truly' < ב- *be-* 'in' + אמת *ʾemet* 'truth', לאורך *la-ʾórex* 'lengthwise' < ל- *la-* 'to the' אורך *ʾórex* 'length' (< אר"כ *ʾ-r-x* + *CóCeC*), היום *ha-yom* 'today' < ה- *ha-* 'the' + יום *yom* 'day', לפי *lefi* 'according to' < ל- *le-* 'to' + פי *pi* 'mouth(construct)' (פה *pe* 'mouth').

Sometimes linear formation and root and pattern combination may coincide, because the meaning of some suffixes and patterns is the same:

בנאי *banay* 'builder' < בנ"י *b-n-y* + *CaCaC*—ימאי *yamay* 'sailor' < ים *yam* 'sea' + *-ay*; ספרן *safran* 'librarian' < ספ"ר *s-f-r* + *CaCCan*—אחיין *ʾaxyan* 'nephew' < אח *ʾaẋ* 'brother' + *-an*; שלישי *šliši* 'third' < של"ש *š-l-š* + *CCiCi*—בסיסי *bsisi* 'basic' < בסיס *basis* 'basis' + *-i*.

Linear formation includes cases where two stems or more are merged into one either by

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