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- Kim E M (1999). *Preaching the presence of God: a homiletic from an Asian American perspective*. Valley Forge, PA: Judson Press.
- LaRue C J (1999). *The heart of black preaching*. Louisville, KY: Westminster John Knox Press.
- Lee J Y (1997). *Korean preaching: an interpretation*. Nashville, TN: Abingdon Press.
- Lischer R (ed.) (2002). *The company of preachers: wisdom on preaching from Augustine to the present*. Grand Rapids, MI: W. B. Eerdmans.
- Long T G & Plantinga C Jr (1994). *A chorus of witnesses: model sermons for today's preacher*. Grand Rapids, MI: W. B. Eerdmans.
- Mitchell H M (1990). *Black preaching: the recovery of a powerful art*. Nashville, TN: Abingdon Press.
- Old H O (1998, 1999, 2002, 2004). *The reading and preaching of the scriptures in the worship of the Christian Church* (4 vols). Grand Rapids, MI: W. B. Eerdmans.
- Osborn R E (1976). 'A functional definition of preaching.' *Encounter* 37, 53–72.
- Osborn R E (1998). *Folly of God: the rise of Christian preaching*. St. Louis: Chalice Press.
- Parrinder G (1961). *Worship in the world's religions*. New York: Association Press.
- 'Preaching' (1971). *Encyclopedia Judaica* (vol. 13). New York: Macmillan. 994–1007.
- Smith C M (1998). *Preaching justice: ethnic and cultural perspectives*. Cleveland, OH: United Church Press.
- Turner M D & Hudson M L (1999). *Saved from silence: finding women's voice in preaching*. St. Louis: Chalice Press.
- Willimon W H & Lischer R (eds.) (1995). *Concise encyclopedia of preaching*. Louisville, KY: Westminster John Knox Press.
- Wilson P S (1992). *A concise history of Christian preaching*. Nashville, TN: Abingdon Press.

## Predication

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The predication relation was introduced into discourse about language by Aristotle in 'On Interpretation,' (paragraphs 5 and 6) when he defined a proposition as an instance of predication, which "asserts or denies something of something." He thus introduced into philosophical and linguistic discussion two central ideas: (a) the syntactic idea that a proposition has a binary structure, with one element, the subject, making reference to an entity and the other expressing a property, and (b) the semantic idea that asserting a proposition involves an act of asserting that an object, the reference of the subject argument, has a property expressed by the predicate. Thus, an assertion of *John is happy* is true if the denotation of the subject argument *John* has the property expressed by the predicate *is happy*.

The concept of predication played a central role in traditional grammatical discourse, and the division of a sentence into subject and predicate, became a commonplace of traditional parsing techniques. However, an understanding of what a subject and predicate actually might be waited until the techniques of modern logic and linguistics, when two questions in particular came to the center of the discussion. The first is the question of why the predication relation is so important, which could be discussed only after Frege had formulated his distinction between saturated and unsaturated linguistic entities. The second question is

why one referential argument, the subject, has a privileged or distinguished position in the sentence, and progress on this point had to wait for the structural tools of modern generative syntax. This issue in fact never arose for Aristotle, since he dealt only with single-argument sentences such as *The ship sailed*, but it arises as soon as we look at sentences such as *The sailors sailed the ship*.

The major breakthrough for predication (and in fact semantics in general) came with the work of Frege at the end of the 19th century. Frege drew the distinction between saturated and unsaturated expressions. A formally unsaturated expression is an expression that contains an empty position filled by a variable, as in the mathematical expression  $x + 2$ , whereas a saturated expression is one that we naturally think of as denoting an object (for Frege, either an individual or a truth value). An unsaturated expression, or function, applies to a saturated expression or argument and yields a value or an output. Thus  $x + 2$  applies to an argument, for example 3, to yield a value that is the denotation of the saturated expression. In this case, the value of the saturated expression  $3 + 2$  is the same as the denotation of 5.

Frege saw that linguistic expressions could be analyzed in the same way. The expression *The capital city of  $x$*  can be analyzed as a function that has as its denotation, or value, a different city depending on which name replaces the variable  $x$ . *The capital city of Germany* denotes Berlin and *The capital city of the UK* denotes London. Similarly, a predicate such as  *$x$  is happy* can be applied to an argument expression

such as *John* or *the boy* to yield a sentence, which has the value true or false, depending on whether or not John is or is not happy.

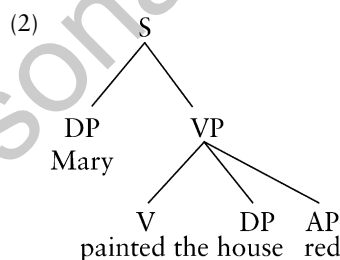
Frege's insight that complex expressions could be built up compositionally from simple saturated and unsaturated expressions, by a recursive process of functional application, was at the root of much progress in logic and semantics, as can be seen in the work of Montague (1970) and the formal semanticists who followed, and the work of Bar-Hillel and the categorial grammarians, all of whom focused on issues of compositionality. The issue of predication entered the syntactic discourse through the seminal work of Halliday (1967), who drew attention to secondary predicates, which were predicated of and expressed properties of local subjects, rather than sentential subjects. Halliday (1967) brought to the attention of linguists that predicative adjectives occurred with quite a limited range of meanings in constructions such as (1), and that the relation between the predicate and its local subject (in bold and italics, respectively) mirrored the semantic relation between the predicate of a sentence and the sentential subject, in the sense that if the sentence asserted was true, the subject had to have the property expressed by the predicate.

- (1a) Mary painted the *house red*.  
 (1b) *John* drove the car **drunk**.  
 (1c) John drove *the car broken*.

Example (1a) is an instance of resultative predication, with the AP predicate expressing a property that the subject is asserted to have at the end of the action expressed by the verbal predicate; (1b) and (1c) are examples of depictive predication, with the AP predicate expressing a property that the subject is asserted to have while the action expressed by the verbal predicate is going on. Resultatives are typically predicated of direct object arguments, while depictives, as the examples in (1) show, may be predicated of subject or direct object arguments.

It was Edwin Williams, who in a series of papers (Williams, 1980, 1983, 1987) brought predication into the domain of generative syntax. Although there had been quite a lot of discussion around the notion of subject, Williams was the first to tie it into a discussion of the subject predicate relation. For him, the central questions were how to explain the syntactic relation of a secondary predicate to its subject (in more modern theoretical language, to explain how the predicate AP is licensed, or integrated into the structure of the sentence), how to explain why the subject argument is distinguished, and how to draw the appropriate structural parallels between secondary and main clause predicates. He argued that

predication is essentially a thematic relation, and that the syntactic predication relation was expressed via the assignment of thematic roles. A lexical head assigns thematic roles to its thematic arguments, and in general all but one of the thematic arguments is assigned to an argument syntactically realized inside the projection of the thematic head. The thematic role assigned outside the projection of the head is external. Williams argued that the subject of a predicate is the argument assigned an external argument, and the primacy of the subject follows from the basic syntactic distinction between external and internal arguments. Thus, in a sentence such as (1a), assigned the structure in (2), the adjective *red* assigns a thematic role outside the maximal AP projection that it heads to *the house* and that therefore is its subject. Williams showed that this mechanism of external theta-role assignment could be used to express sentential subject predicate relations also. In (1a), *Mary* is assigned a thematic role 'agent' by *paint* outside the VP projection of the head, and is thus the subject of the whole predicate *paint the house red*.



What Williams captured precisely in this account is the duality of the relation between the sentential subject and the verb: the subject is a thematic argument of the verb, but subject of the whole predicate phrase that the verb heads. Williams was not explicit about the semantic interpretation of the predication relation, but he assumes that the adicity of the lexical head (the number of thematic roles it assigns) directly reflects the adicity of a semantic relation denoted by the lexical head and that thematic role assignment is a syntactic reflection of a semantic relation. Williams was thus making implicit use of Frege's classification of linguistic objects into saturated and unsaturated. This became explicit in Williams (1987), where he presents an account of the mapping between syntactic representation and semantic representation, where he argues that unassigned thematic roles are interpreted as unsaturated variables in the semantic representation. Furthermore, argument traces (NP, or rather DP, traces) are to be analyzed as variables in the same way, and thus NP movement is ultimately reducible to the predication relation.

Rothstein (1983) and later Rothstein (1995, 2001) followed Williams in identifying predication as a

central mechanism in syntactic theory, but argued against identifying syntactic unsaturatedness with unassigned thematic roles. She argued that in order to analyze a sentence generally as an instance of a predication relation, it is necessary to recognize cases of predication that do not involve a thematic relation between the head of the predicate and the subject. This is because of the existence of pleonastics, or nonthematic subjects, examples of which are given in (3):

- (3a) It seems that John will not arrive on time.
- (3b) Il a été mangé trois pommes. (French)  
it has been eaten three apples.  
'Three apples have been eaten.'
- (3c) ze meatzben Se dani meaxer. (Hebrew)  
it irritates that dani is late.  
'It is irritating that Dani is late.'

Rothstein argued that the Fregean saturated/unsaturated distinction is a primitive typal syntactic distinction between two different kinds of syntactic constituents: arguments and predicates. The typically referential constituents, DP and CP, are syntactically saturated and canonically serve as arguments, while the AP, PP, VP, and NP constituents are inherently unsaturated and can serve as predicates. Unsaturated constituents are typically saturated either directly or indirectly by predication (although NP arguments are saturated via determiner binding when they appear in argument position). Crucially, the syntactic relation between the pleonastic subject *it* in (3a) and the VP *seems that John will not arrive on time* is exactly the same predication relation as holds between the subject *John* and predicate *is happy* in the sentence *John is happy*. Rothstein argued that under this analysis, the distribution of pleonastic subjects in English could be completely predicted, and that the obligatoriness of the subject (expressed in Chomsky's 1982 Extended Projection Principle) could be explained. In particular, she gave an account of the obligatoriness of the pleonastic in complement position of verbs such as *consider*, illustrated in (4a), in which she argues that pleonastics appear as the subject of small clause predications, and of the optional movement of CP direct objects to subject position illustrated in (4b):

- (4a) I consider it ridiculous that John is late again.
- (4b) It has long been believed that the earth is flat.

In this approach, thematic subjects are just a proper subset of subjects, and thematic role assignment to subject position uses the predication relation, just as thematic role assignment to internal arguments is via Case assignment relations or prepositions. Rothstein argued that there were two different kinds

of predication: primary, or clausal, predication and secondary, or adjunct, predication. The particular constraints on adjunct predication (see Rothstein, 2003) mean that secondary predicates are essentially thematic, while primary predication need not be so.

Another approach to predication, which starts from different assumptions, but has some of the same syntactic consequences as Rothstein's, is Gennaro Chierchia's. Working within the framework of property theory, he proposed treating semantic properties as having two modes of presentation, an unsaturated predicate and its individual property correlate,  $\pi$ . He is concerned primarily with semantic issues, in particular, how properties can be predicated of themselves, as in *Being wise is wise* or *Cheerfulness is cheerful*. In Chierchia's theory, a VP denotes a saturated property, and Inflection denotes a function from individual properties into propositional functions, which applies to a VP and yields a propositional function, independently of whether the VP requires a thematic subject. Chierchia differs from Rothstein, who claims that the VP is formally a predicate, and he does not extend his theory to deal with noninflected predicates, but both approaches have in common that the clause is structurally constrained to be an instance of predication, independent of the thematic properties of the predicate or its head. Positing a structural, nonthematic predication relation has been quite fruitful in terms of syntactic explanatoriness. The structural approach to predication has been quite productive in leading to analyses of propositional structure, in particular with respect to the distribution of pleonastics and nonthematic predicates and copula constructions.

A second direction on which predication studies have focused has been the variety and differing properties of secondary predicates crosslinguistically. As mentioned above, there seem to be two kinds of secondary predicates, resultatives and depictives, where resultatives are generally restricted to taking direct objects as their subjects, while depictives can apply to both subjects and objects. Much work has focused on the particular syntactic properties associated with different secondary predicates in different languages, for example with the structural constraints on subject predicate relations (Demonte, 1986), Case properties associated with different secondary predicates (especially in Russian, e.g., Filip, 2001), whether secondary predicates are independent predicates or form a lexical complex predicate with the verb in Germanic (Neeleman, 1994; Neelman and Weerman, 1993; Wunderlich, 1997), whether or not resultatives are truly oriented toward the direct object, (Rappaport Hovav and Levin, 2001; Wechsler, 1997; Kim, 1993), and how best to capture the semantic constraints on

their interpretations. Some of the most interesting syntactic work in recent years has emerged from the attempts to give a unified semantics for depictive and resultative secondary predicates (see, e.g., Rothstein, 2003) and work by Cormack and Smith (1994, 1999), who suggest that secondary predication should be seen as a kind of serial verb construction for languages that do not otherwise allow them. While this idea has not yet been worked out in any detail, it seems a potentially fruitful direction in which to take the syntax of predication.

*See also:* Complex Predicates; Propositional and Predicate Logic; Linguistic Aspects; Subjects and the Extended Projection Principle; Thematic Structure.

## Bibliography

- Aristotle (1941). *The basic works*. In McKeon R (ed.). Random House.
- Chierchia G (1984). *Topics in the syntax and semantics of infinitives and gerunds*. Ph.D. diss. University of Massachusetts, Amherst.
- Cheirchia G (1986). 'Predication.' *Linguistic Inquiry* 17, 417–443.
- Collins C (1997). 'Argument sharing in serial verb constructions.' *Linguistic Inquiry* 28, 461–497.
- Cormack A & Smith N (1994). 'Serial verbs.' In *Working Papers in Linguistics* 6. *Phonetics and Linguistics*. London: University College London. 63–88.
- Cormack A & Smith N (1999). 'Why are depictives different from resultatives?' In Iten C & Neelman A (eds.) *Working Papers in Linguistics* 11. *Phonetics and Linguistics*. London: University College London. 251–284.
- Demijanoff A & Strigin A (2003). 'Real adjuncts in instrumental in Russian.' In Lang E, Maienborn C & Fabricius-Hansen C (eds.) *Modifying adjuncts*. Berlin: Mouton.
- Demonte V (1986). 'Predication and passive.' In Bordelois I, Contreras H & Zagona K (eds.) *Generative studies in Spanish syntax*. Dordrecht: Foris. 51–66.
- Filip H (2001). 'The semantics of case in Russian secondary predicates.' *Proceedings of SALT XI*. 191–211.
- Franks S & Hornstein N (1992). 'Secondary predicates in Russian and proper government of PRO.' In Higginbotham J, Larson R, Iatridou S & Lahiri U (eds.) *Control and grammar*. Dordrecht: Kluwer.
- Frege G (1891). 'Function and concept.' In Geach P & Black M (eds.) *Translations from the Philosophical Writings of G Frege*, 1980 edn. NJ: Rowman and Littlefield. 21–41.
- Frege G (1892). 'Concept and object.' In Geach P & Black M (eds.) *Translations from the Philosophical Writings of G Frege*, 1980 edn. NJ: Rowman and Littlefield. 42–55.
- Halliday M (1967). 'Notes on transitivity and theme in English, Part I.' *Journal of Linguistics* 3, 37–81.
- Kim J-B (1993). 'Syntax and semantics of Korean resultative constructions.' In Kuno S, Lee I, Whitman J, Maling J, Kang Y-S & Kim Y-J (eds.) *Harvard Studies in Korean Linguistics* V, 471–482.
- Landman F (2001). *Indefiniteness and the type of sets*. Blackwell: Oxford.
- Montague R (1970). Universal grammar. *Theoria* 36, 373–398. Reprinted in *Formal philosophy: selected papers of Richard Montague*, Thomason R H (ed) New Haven: Yale.
- Napoli D (1992). 'Secondary resultative predicates in Italian.' *Journal of Linguistics* 28, 53–90.
- Neeleman A (1994). *Complex predicates*. Ph.D. diss. Utrecht University.
- Neeleman A & Weerman F (1993). 'The balance between syntax and morphology: Dutch particles and resultatives.' *Natural Language and Linguistic Theory* 11, 433–475.
- Pesetsky D (1982). *Paths and categories*. Ph.D. diss. MIT.
- Rappaport Hovav M & Levin B (2001). 'An event-structure account of English resultatives.' *Language* 77, 766–797.
- Rothstein S (1983). *The syntactic forms of predication*. Ph.D. diss. MIT.
- Rothstein S (1995). 'Pleonastics and the interpretation of pronouns.' *Linguistic Inquiry* 26, 499–529.
- Rothstein S (2001). *Predicates and their subjects*. Dordrecht: Kluwer.
- Rothstein S (2003). 'Secondary predication and aspectual structure.' In Lang E, Maienborn C & Fabricius-Hansen C (eds.) *Modifying adjuncts*. Berlin: Mouton.
- Safir K (1983). 'On small clauses as constituents.' *Linguistic Inquiry* 14, 730–735.
- Schein B (1982/1995). 'Predication.' In Cardinaletti A & Guasti T (eds.) *Small clauses, Syntax and Semantics* 28, 49–76.
- Simpson J (1983). 'Resultatives.' In Levin L, Rappaport M & Zaenen A (eds.) *Papers in lexical-functional grammar*. Bloomington: Indiana University Linguistics Club.
- Takezawa K (1993). 'Secondary predication and locative/goal phrases.' In Hasegawa N (ed.) *Japanese syntax in comparative grammar*. Tokyo: Kurosio Publishers. 45–77.
- Washio R (1997). 'Resultatives, compositionality and language variation.' *Journal of East Asian Linguistics* 6, 1–49.
- Washio R (1999). 'Some comparative notes on resultatives.' In Muraki M & Iwamoto E (eds.) *Linguistics: in search of the human mind – A Festschrift for Kazukoe Inoue*. Tokyo: Kaitakusha.
- Wechsler S (1997). 'Resultative predicates and control.' *Texas Linguistics Forum* 38, 307–321.
- Wechsler S & Noh B (2001). 'On resultative predicates and clauses: parallels between Korean and English.' *Language Sciences* 23, 391–423.
- Williams E (1980). 'Predication.' *Linguistic Inquiry* 11, 203–238.
- Williams E (1983). 'Against small clauses.' *Linguistic Inquiry* 14, 287–308.
- Williams E (1987). 'NP trace and theta-theory.' *Linguistics and Philosophy* 10, 203–238.
- Wunderlich D (1997). 'Argument extension by lexical adjunction.' *Journal of Semantics* 14, 95–142.