Measuring distance between dependent words in Gibson’s Dependency Locality Theory (DLT).

DLT posits that the cost of integrating an incoming word with a prior dependent word increases with the distance between the incoming word and the prior word (the site of integration). Distance is measured as the number of new “discourse referents” (nouns and verbs) since the site of integration. Thus DLT uses a linear measure of distance rather than a hierarchical one (e.g. one based on counting nodes in a syntactic tree), and does not depend on the details of any particular phrase structure theory.

Gibson recognizes that equating integration cost with linear distance is a simplification. Other factors which may influence the integration cost of a word include the complexity and contextual plausibility of structural integrations which have taken place between the incoming word and its site of integration [cf. Gibson, E., in *Image, Language, Brain* (eds. Miyashita, Y., Marantaz, A., & O’Neil, W.) 95-126 (MIT Press, Cambridge, Massachusetts, 2000)], and the semantic relationship of the incoming word to words between it and its site of integration [cf. Gordon, P.C., Hendrick, R., & Johnson, M. Memory interference during language processing. *Journal of Experimental Psychology: Learning, Memory & Cognition* 27, 1411-1423 (2001)]. Furthermore, integration cost may reach an asymptote after a few intervening new discourse referents rather than remaining a linear function of distance. Nevertheless, equating cost with linear distance provides a good starting point and performs remarkably well in predicting behavioral data such as reading time data in sentence processing experiments.