

Outline of a Theory of Interpretation

ESSLLI 2022 Course Proposal

Paul J. E. Dekker

Title: Outline of a Theory of Interpretation

Lecturer: Dr. Paul Dekker

Affiliation: ILLC/Department of Philosophy, University of Amsterdam

Category: Advanced

Area: Logic and Language (Preferred: “Language, Logic and Philosophy”)

Contact Details: Science Park 107, NL 1098 XG
Amsterdam, The Netherlands
p.j.e.dekker@uva.nl
<http://www.uva.nl/profiel/p.j.e.dekker>

Abstract: The course formally elaborates the idea of a theory of interpretation by translation, mostly in the spirit of Frege, Quine, Davidson and Kamp. The course provides some minimal formal tools required for presenting our extensional understanding of actual discourse, including intensional discourse, and a more or less philosophical motivation for presenting it this way. While most of the developed formalism will be by and large similar to the relatively common semantics architectures, the proposed approach distinguishes itself in that it tries and accomplish all this with no, or the least possible, ontological and representational commitments. We make no assumptions about what meanings are, or possibilities, or representations—or objects, for that matter, nor about how one could go about modeling them. The course might be very adequately characterized as a training in a logical, Fregean, understanding of *DRT*, and related formalisms.

In the course we will step by step develop the language and its logic. We motivate and introduce the formal language in various stages, each time explaining how it is to be understood (explain its *Sinn* so to speak), characterize its logic, and indicate how it can be interpreted model-theoretically (sketch its possible *Bedeutung*). The, minimal, logical architecture will be seen to allow for a neat but also novel understanding of the logical connectives, indexicals, names, propositional attitudes, and intentional existence. Even though it will not be explicitly argued here, the proposed architecture can be claimed to be compatible with various more specifically charged frameworks like those of formal dynamic semantics and cognitive conceptual grammar, and distributional approaches to meaning.

Keywords: theory of interpretation, dynamic semantics, discourse representation, proper names, indexicals, identity, necessity, propositional attitudes, natural deduction, logical space, intentional being.

Motivation There exists no consensus about what the proper format of a theory of meaning should be like, and this seems to be quite rightly so. While dedicated branches of linguistics, philosophy and cognitive science benefit from their own choices for particular interpretive architectures, no one can, of course, claim to have adopted the one and only true theory of meaning. And no one should, of course, for obvious philosophical reasons, but also for practical ones. I propose, instead, an architecture of interpretation as translation that aims to combine basic insights from—surprisingly, perhaps, to find them together—Frege, Quine, Davidson, Hintikka, and Kamp. The architecture does, formally speaking, not appear to be truly novel, as it employs a “conceptual notation”, reminiscent of the logical forms in grammars developed in the Chomsky- and Montague- and Kamp-traditions. The presentation and interpretation, of these structures is, however, significantly different.

In the spirit of (Quine 1960; Davidson 1967), among many others, our intentional understanding of extensional discourse is framed in translations in a formal language the interpretation of which is assumed to be familiar. The ensuing readings are given in the convenient format of structures which formally resemble the discourse representation structures of (Kamp 1981; Kamp, Van Genabith & Reyle 2011; Geurts, Beaver & Maier 2016), but for the fact that they are not conceived of as representations, but as presentations, like the structures and models familiar from cognitive grammar. Distinct from the latter structures, however, the contents of the structures are characterized by the inferences that they license, in the format of a natural deduction system in the style of Anderson and Johnstone. The proof-theory itself is backed up by a specification of their satisfaction conditions, in the formal style of Tarski, relative to which the dynamic proof system is shown to be sound and complete. The formal language indeed inherits the character of a conceptual notation (Frege’s *Begriffsschrift*), except for the fact that its logic and ontology is explicitly ‘ours’, and is not aimed at displaying THE logical form, if any such exists, of the discourses to be interpreted.

The approach advocated has two major distinctive characteristics, implicit in our aim to provide for an extensionalist understanding of actual intentional discourse. First, it is actualist. The aim is to provide translations of actually occurring, “live”, pieces of discourse, which we, in our words, try to make sense of, and the obtained translations themselves are assumed to be “live”, too. Such may suffice to provide an anchor to the world, time and place (if any) of a discourse, and of its translation, as they can be defined as the world, time and place (if any) of ITS occurrence. Second, it is intentionalist. We assume that the reader/user can herself read and understand the translations, guided by the additionally supplied statement of their logic and satisfaction conditions. These interpretations so to speak provide our “access” to propositions and concepts (Fregean thoughts, or “Sinne”, so-called), while it must be understood that the thoughts and concepts are there only intentionally, through the (intentional) presentation. Unlike Frege, we make no ontological commitments, not to thoughts, propositions, not even to possibilities, for the time being. Neither do we, of course, make any representationist assumptions. By the end of the week, we will, however, be able to employ Quine to open the door to Fregean realms of thought, or other areas of metaphysical speculation.

While the approach advocated in this course is, naturally, formulated in some specific formalism, I hope its modest presuppositions allow the particular treatments of names, anaphors, demonstratives, propositional attitudes and intentional being, to be transportable to (formal) frameworks of any other kind.

Course Outline Here is day to day list of main subject, with acronym of the associated formalism, and the subordinate subjects that (may) pass the review.

Day 1 Impication by Exclusion (EPL)

- Theory of Interpretation by Translation
- Generalized Peirce-Sheffer Stroke
- Natural Deduction and the ‘Excluded’ Third

Day 2 Discourse Reference and Dynamic Entailment (IPL)

- Declarations of Discourse Referents (Heim-Vermeulen-style)
- Indexical Coreference (de Bruijn-style)
- Dynamic Interpretation and Discourse Representation

Day 3 Logic and Use of Names in Discourse (DPT)

- Referential and Predicative Uses of Names
- Discourse *Re*-Presentations and Nominal Declarations
- Anaphoric Rigidity and Stubborn Identity

Day 4 Presentations of Beliefs about Reality (IPT)

- Characterization of Intentional States
- ‘Logical Omniscience’ so-called
- *De Rebus* Characterization of the Attitudes

Day 5 Talk about Things Non-Existent (TBC)

- The Problem of Non-Existence
- Intentional Reification
- Construal of Intentional Being

For each class preparatory readings are made available. They will not themselves be discussed in class, but they will facilitate the students to enter the class in the right frame of mind. By and large the plan is then as follows. On each meeting I aim to start with a brief overview of the main extant position on the subject of that day. Next I provide a motivation for accommodating it in our language, and present and explain the relevant aspects of its logic and semantics. Finally I will, whenever relevant, discuss the philosophical and practical implications of doing it this way, rather than possibly other ways. Of course, each individual meeting may deviate somewhat from this general plan.

Detailed Course Description In order to bypass, and subsequently motivate, a particular semantics, I will begin the course the first two days by presenting a proof theory for a language with the expressive power of first order predicate logic, but also with the computational benefits of *Discourse Representation Theory*. The logic will be seen to be autonomous in the sense that it is, (a) motivated by logical considerations only, not linguistic or semantic ones, (b) it is free from artifacts like variables, (c) it is free from essentialist and existentialist assumptions,

and (d) it is genuinely indexical, in that the rules essentially only draw from resources actually given, not postulated.

In the third class the formalism is restated in terms of structures from the *DRT*-framework, and a presentationalist understanding of *DRT*'s discourse representational formalism is given. Such a reinterpretation is primarily motivated so as to re-emphasize *DRT*'s original cognitive psychological ambitions (Kamp 1981). Like I said, the translations that we obtain are assumed to be understood, and they serve to *re-present* (i.e., *present again*) what we take from an actually given piece of discourse, just like diagrams and models are used in various versions of Cognitive Grammar, like that of, e.g., (Langacker 1987, Croft and Cruse 2004, Fauconnier 2010). The actualist intentional understanding of *DRT* is next shown to give a clue to the proper interpretation of names. The indexical *DRT* formalism presents individuals by names, and projects their resolution. Their purely logical role is captured by natural deduction-style declarations, while their discourse role is assumed to be captured further by a van der Sandt-style presupposition projection, with, again, an actualist interpretation. We finally, tentatively, introduce a necessity, and associated possibility operator, and our proof-theoretic outlook on interpretation will next be employed against a Kripkean interpretation of identity statements as necessities. Necessary conclusions should be derived, by logical means, from necessity assumptions.

Our understanding of propositional attitude reports in the fourth class furthers the presentationalist, and non-representationalist, outlook on meaning. Such motivates an interpretation of their objects in the style of Hintikka, Stalnaker and Lewis, and perhaps Quine, as presentations, in our own terminology or language, of possibilities relative to which we could make sense of the actual verbal and non-verbal of the agents characterized. The so-called problems of 'logical omniscience' and of the 'deductive closure' of beliefs are argued to be a misnomer for the demonstratively improper use of these attitude ascriptions. The actual use of various attitude description may vary from context to context, more flexibly even than Stalnaker observed. More challenging has been the question how reported beliefs and intentions of other people can be seen to be related to individuals assumed to actually exist. This can be seen to make sense if we can see the relevant beliefs (like the necessities mentioned above) derive from other beliefs, which are assumed to be joint beliefs about a shared situation, which in its turn houses the individuals in question. The proper treatment of such locutions then, inspired, but not guided, by the work of Aloni 2005, also gives us a hand in making sense of talk about non-existent objects, the subject of the last lecture.

This last subject poses two challenges. How to make sense of talk about things that don't exist, that is a problem adequately, but obviously not decisively, addressed by Quine in his "On What There Is". Too many linguists and philosophers somehow deploy Quine to support their unwieldy possibilist, fictional, or representational universes, just because talk of that there is. (For after all, Quine himself admitted that he had opened the door to speculative metaphysics, in his famous paper on the "Two Dogma of empiricism".) The first challenge is to make sense of such talk, without making unwanted ontological commitments. From the presentationalist understanding of *DRT*, the answer to this challenge consists in the method of intentional reification. Like extensional reification, intentional reification is a form of construal, but one without particular empirical truth-conditional impact. Intentional reification remains intentional in that it, only, serves to contribute to our understanding of intentional states or spaces as being coordinated. Its impact is theoretical. The possibility to understand, and also construct, intentional space, next provides a means of appreciating and evaluating speculative and perhaps mathematical discourse. The hypothesization, or stipulation, or defi-

inition of a formal or even substantial domain of objects, may serve to disclose an intentional space, which can be made intuitively accessible if it is assumed to elaborate a certain jointly understood and abstract part of our real world. This suggest the possibility of, e.g., a Quinean speculative metaphysical glance at Frege's famous third realm, as Frege perhaps dreamt of in his *Grundlagen* (1884), from the arguably phenomenological perspective that Frege briefly sketched at the end of his *Gedanke* (1918). This final part of the course will be very speculative itself, of course.

Level and Teaching Goals The course is classified as advanced, since it aims to address a select group of students with mature logical skills and linguistic / philosophical interests. Even so, I believe, the material is readily and naturally accessible, so it would not be improper to eventually classify it as introductory, for a select audience, that is. The aims are to:

- provide students with a philosophical background appropriate for a Theory of Interpretation and achieve some level in practicing and oneself developing it;
- enhance the understanding of a Fregean *Begriffsschrift*, or a framework like that of *Discourse Representation Theory*, as samples of such a Theory of Interpretation.
- develop a flexible attitude in thinking about meaning in various monolithic approaches to meaning such as embodied in Montague grammar, cognitive grammar, distributional semantics, dynamic semantics, inquisitive semantics, situation semantics, etc.;
- support the student in maintaining a properly positive, so also critical, attitude towards metaphysical thinking (substantialist and representationalist);
- present each student with at least one insight that will occupy (inspire or frustrate) her for a substantial period in her future intellectual life.

Background of the Lecturer and Previous Experience with ESSLLI The course builds on, furthers and systematizes my previous work of the last seven years or so on dynamic interpretation, indexical inference, compositionality and contextuality, attitude ascriptions and talk about non-existent objects. Most of it has been published¹ and presented on previous occasions² or in master classes³. The Summer School provides for an excellent platform to develop and present the whole in one coherent program of work.

¹In particular, Dekker 1994, 1999, 2004, 2011, 2012, 2014, 2015, 2016, 2017a and 2017b.

²E.g., "Herakleitian Oppositions", World Congress on the *Square of Opposition*, Beirut, June 2012 "The Hamburger Ordered the Hamburger", *Linguistics and Philosophy* Workshop, Frankfurt, May, 2013; "The Live Principle of Compositionality", Workshop *Bridging Formal and Conceptual Semantics* Düsseldorf, April, 2014; "We are the Champions. *De Se or De Nobis?*", *Philosophy of Language and Mind*, Donostia, September 2014; "Natural Deduction", invited lecture *Workshop in Honor of Hans Kamp*, Nancy, October 2014; "Indexical Inference", Workshop *Going Heim*, University of Connecticut, May, 2015; "Au Revoir to Truth", *Philosophy of Language and Mind*, Barcelona, September 2016; "Reflections of the Convert's Square", Keynote Speech at the World Congress on the *Square of Opposition*, Easter Island, November 2016; "Talk about Things Non-Existent", invited lecture, Workshop *Reference*, Düsseldorf, November 2017; "Exclusive Indexical Inference", presentation at André Fuhrmann's Colloquium, Frankfurt, June 2018; "Talk about Things Non-Existent", presentation at Ede Zimmermann's, Frankfurt, June 2018; "PROPOSITIONS and *Propositions*", workshop *Bridging Formal and Conceptual Semantics*, ESSLLI Workshop, Sofia, August 2018; "Frege's Principles", invited lecture *Heyting Dag on FREGE'S GEDANKE*, Amsterdam, March, 2019.

³Especially "Formal Semantics and Cognitive Grammar", 2015, 2016, 2017 and "Sense of *Belief*", 2013, 2014, 2018 in the ILLC, *Master of Logic* program, a program officially credited as "excellent".

I have attended many ESSLLI's. I visited the first two as a lecturer and as a student, and I only failed nine afterwards. Over the years I have delivered various contributions to ESSLLI courses and workshops, and I gave two classes (in Saarbruecken, 1998, with David Beaver, and in Trento, 2002 with Robert van Rooij), and one workshop (in Malaga, 2006, with Hedde Zeijlstra). I was the chair of the program committee of ESSLLI Edinburgh in 2005.

I have for quite some time not submitted course or workshop proposals because I figured as the chair of the ESSLLI Standing Committee from 2007 to 2017, and in that capacity I have installed the rule that persons in that capacity, which have a sounding voice in establishing the program, ought not to submit proposals themselves, like the members of the program committee. Since then, a rudimentary version of in conception the same course has been presented at ESSLLI 2019 in Riga for a group of 15 dedicated students and colleagues.

The present proposal can be called "Old School", in that it does not contribute to a current popular theme, neither does it provide an overview of recent work on a topical issue. Like in the old days of ESSLLI, I hope the course can be appreciated for its own sake, and that it may serve in contributing both to the maintaining of a common ground in classical logico-philosophical issues, and to the actual defining, elaborating and evaluating all the current work that can be subsumed under the umbrella "Theory of Interpretation". I would therefore be very happy and honored if the programme committee judged this class suitable for presentation.

External Funding Will be provided by the lecturer's home institution.

References

[This is list of references relevant to the course.]

- Aloni, Maria 2005. Individual Concepts in Modal Predicate Logic. *Journal of Philosophical Logic* 34, 1–64.
- Anderson, John Mueller & Henry W. Johnstone Jr. 1962. *Natural Deduction*. Belmont: Wadsworth.
- Bach, Kent 2015. The Predicate View of Proper Names. *Philosophy Compass* 10/11, pp. 772–84.
- Carpintero, Manuel García 2018. The Mill-Frege Theory of Proper Names. *Mind* 127, pp. 1107–1168.
- Croft, William & D. Alan Cruse 2004. *Cognitive Linguistics*. Cambridge: Cambridge University Press.
- Davidson, Donald 1967. Truth and Meaning. *Synthese* 17(3), 304–323.
- Davidson, Donald 1974. Thought and Talk. In: Donald Davidson (ed.) *Inquiries into Truth and Interpretation*, Oxford: Clarendon Press. 155–171.
- Dekker, Paul 1994. Predicate Logic with Anaphora (seven inch version). In: Lynn Santelmann & Mandy Harvey (eds.) *Proceedings of SALT IV*. DMLL Publications, Cornell University, 79–95.
- Dekker, Paul 1999. Her Intentional Space. In: Laure Vieu & Myriam Bras (eds.) *Proceedings of TALN*. Paris: ATALA, 45–54.
- Dekker, Paul 2004. Grounding Dynamic Semantics. In: Anne Bezuidenhout & Marga Reimer (eds.) *Descriptions and Beyond: An Interdisciplinary Collection of Essays on Definite and*

- Indefinite Descriptions and other Related Phenomena*, Oxford: Oxford University Press. 484–502.
- Dekker, Paul 2011. Jigsaw Semantics. In: Barbara H. Partee, Michael Glanzberg & Jurgis Skilters (eds.) *Formal semantics and pragmatics. Discourse, context and models*, Manhattan, KS: New Prairie Press. 1–26.
- Dekker, Paul 2012. *Dynamic Semantics*. Berlin: Springer.
- Dekker, Paul 2014. The Live Principle of Compositionality. In: Daniel Gutzmann, Jan Köppling & Cécile Meier (eds.) *Approaches to Meaning: Composition, Values, and Interpretation*, Leiden: Brill. 45–84.
- Dekker, Paul 2015. Not *Only* Barbara. *Journal of Logic, Language and Information* 24(2), 95–129.
- Dekker, Paul 2016. Exclusively Indexical Deduction. *Review of Symbolic Logic* 9(3), 603–637.
- Dekker, Paul 2017a. Live Meanings. In: Kata Balogh & Wiebke Petersen (eds.) *Bridging Formal and Conceptual Semantics*, Düsseldorf: Düsseldorf University Press. 13–37.
- Dekker, Paul 2017b. Logical Conversions. *South American Journal of Logic* .
- Dekker, Paul 2019. *Names in Logic and Discourse*. Manuscript. Amsterdam: ILLC/University of Amsterdam.
- Fauconnier, Gilles 2010. Mental Spaces. In: Dirk Geeraerts & Hubert Cuykens (eds.) *The Oxford Handbook of Cognitive Linguistics*, Oxford: Oxford University Press. 351–376.
- Fara, Delia Graff 2015. Names Are Predicates. *Philosophical Review* 124, pp. 59–117.
- Frege, Gottlob 1879. *Begriffsschrift, Eine der arithmetischen nachgebildete Formelsprache des reinen Denkens*. Halle: Verlag von Louis Nebert.
- Frege, Gottlob 1892. Über Sinn und Bedeutung. *Zeitschrift für Philosophie und philosophische Kritik* NF 100, 25–50.
- Frege, Gottlob 1918. Der Gedanke. Eine logische Untersuchung. *Beiträge zur Philosophie des deutschen Idealismus* 2 1, 58–77.
- Geach, Peter T. 1967. Intentional Identity. *Journal of Philosophy* 64, 627–632.
- Geurts, Bart, David I. Beaver & Emar Maier 2016. Discourse Representation Theory. In: Edward N. Zalta (ed.) *The Stanford Encyclopedia of Philosophy*, Stanford: <http://plato.stanford.edu/>. Spring 2016 edition.
- Groenendijk, Jeroen & Martin Stokhof 1991. Dynamic Predicate Logic. *Linguistics and Philosophy* 14(1), pp. 39–100.
- Heim, Irene 1983. File Change Semantics and the Familiarity Theory of Definiteness. In: Rainer Bäuerle, Christoph Schwarze & Arnim von Stechow (eds.) *Meaning, Use, and Interpretation of Language*, Berlin: de Gruyter. pp. 164–89.
- Hintikka, Jaakko 1969. Semantics for Propositional Attitudes. In: John Whitney Davis, Donald J. Hockney & W.K. Wilson (eds.) *Philosophical Logic*, Dordrecht: Reidel. 21–45.
- Husserl, Edmund 1913. *Logische Untersuchungen*. Tübingen: Niemeyer Verlag. 2. Auflage.
- van Inwagen, Peter 2003. Existence, Ontological Commitment, and Fictional Entities. In: Michael Loux & Dean Zimmermann (eds.) *The Oxford Handbook of Metaphysics*, Oxford: Oxford University Press. 131–57.

- Kamp, Hans 1981. A Theory of Truth and Semantic Representation. In: Jeroen Groenendijk, Theo Janssen & Martin Stokhof (eds.) *Formal Methods in the Study of Language*, Amsterdam: Mathematical Centre. 277–322. Reprinted in J. Groenendijk, T. Janssen, and M. Stokhof (eds.), 1984, *Truth, Interpretation and Information*, Foris, Dordrecht, pp. 1–41.
- Kamp, Hans 2015. Using Proper Names as Intermediaries Between Labelled Entity Representations. *Erkenntnis* 80, pp. 263–312.
- Kamp, Hans, Josef Van Genabith & Uwe Reyle 2011. Discourse Representation Theory. In: Dov Gabbay & Franz Guenther (eds.) *Handbook of Philosophical Logic*, Dordrecht: Reidel, volume 15. 125–394.
- Kripke, Saul 1972. Naming and Necessity. In: Donald Davidson & Gilbert Harman (eds.) *Semantics of Natural Languages*, Dordrecht: Reidel. pp. 254–355, 763–769.
- Kripke, Saul 1979. A puzzle about belief. In: Avishai Margalit (ed.) *Meaning and Use*, Reidel, Dordrecht. 239–283.
- Langacker, Ronald W. 1987. *Foundations of Cognitive Grammar*. Stanford: Stanford University Press.
- Lewis, David 1979. Attitudes De Dicto and De Se. *The Philosophical Review* 88(4), 513–45.
- Moltmann, Friederike 2015. Quantification with Intentional and with Intensional Verbs. In: Alessandro Torza (ed.) *Quantifiers, Quantifiers and Quantifiers: Themes in Logic, Metaphysics, and Language*, Dordrecht: Springer. 141–68.
- Perry, John 1979. The Problem of the Essential Indexical. *Noûs* 13, 3–21.
- Quine, Willard Van Orman 1948. On What There Is. *Review of Metaphysics* 2, pp. 21–38.
- Quine, Willard Van Orman 1956. Quantifiers and Propositional Attitudes. *Journal of Philosophy* 53, 177–187. Reprinted in: W.V. Quine, 1966, *The Ways of Paradox and Other Essays*, Random House, New York.
- Quine, Willard Van Orman 1960. Translation and Meaning. In: W.V.O. Quine (ed.) *Word and Object*, Cambridge, MA: MIT Press. 26–72.
- Stalnaker, Robert 1987. Semantics for Belief. *Philosophical Topics* 15, 177–190.
- Tarski, Alfred 1956. The Concept of Truth in Formalized Languages. In: *Logic, Semantics, Metamathematics*, Oxford: Clarendon Press. 152–278. Originally published as “Der Wahrheitsbegriff in der formalisierten Sprachen”, 1936, *Studia Philosophica* 1, pp. 261–405.