



Universiteit
Leiden
The Netherlands

Connecting conditionals: a corpus-based approach to conditional constructions in Dutch

Reuneker, A.

Citation

Reuneker, A. (2022, January 26). *Connecting conditionals: a corpus-based approach to conditional constructions in Dutch*. *LOT dissertation series*. LOT, Amsterdam. Retrieved from <https://hdl.handle.net/1887/3251082>

Version: Publisher's Version

License: [Licence agreement concerning inclusion of doctoral thesis in the Institutional Repository of the University of Leiden](#)

Downloaded from: <https://hdl.handle.net/1887/3251082>

Note: To cite this publication please use the final published version (if applicable).

Connecting Conditionals

A Corpus-Based Approach to Conditional
Constructions in Dutch

Published by

LOT
Kloveniersburgwal 48
1012 CX Amsterdam
The Netherlands

phone: +31 20 525 2461

e-mail: lot@uva.nl
<http://www.lotschool.nl>

Cover illustration: *Moroccan Horseshoer*, by Marià Fortuny, c. 1870.

ISBN: 978-94-6093-395-0
DOI: <https://dx.medra.org/10.48273/LOT0610>
NUR: 616

Copyright © 2022 Alex Reuneker. All rights reserved.

Connecting Conditionals

A Corpus-Based Approach to Conditional Constructions in Dutch

Proefschrift

ter verkrijging van
de graad van doctor aan de Universiteit Leiden,
op gezag van rector magnificus prof. dr. ir. H. Bijl,
volgens besluit van het college voor promoties
te verdedigen op woensdag 26 januari 2022
klokke 15.00 uur

door

Alex Reuneker

geboren te Leidschendam
in 1985

Promotor:

prof. dr. A. Verhagen

Co-promotor:

dr. R. J. U. Boogaart

Promotiecommissie:

prof. dr. B. Dancygier (University of British Columbia)

prof. dr. J. S. Doetjes

prof. dr. E. L. J. Fortuin

dr. N. Levshina (Max Planck Institute for Psycholinguistics)

prof. dr. T. J. M. Sanders (Utrecht University)



This research was supported by the Netherlands Organisation for Scientific Research (NWO) under project number 023.005.085.

This dissertation is dedicated to Eva.
Thank you for everything.

If a being suffers there can be no moral justification for refusing to take that suffering into consideration.

Peter Singer, *Animal Liberation* (1975, p. 8)

Contents

Acknowledgements	xix
Symbols and notation conventions	xxi
1 Introduction	1
1.1 Conditionals	3
1.2 Main aim	6
1.3 Theoretical background	8
1.4 Data and methodology	12
1.5 Contributions to the linguistic study of conditionals	14
1.6 Structure of this dissertation	15
2 Semantics and pragmatics of conditionals	17
2.1 Introduction	17
2.2 Conditionals in natural language	18
2.2.1 Introduction	18
2.2.2 Functions of conditionals	20
2.2.3 Forms of conditionals	23
2.2.4 Characteristics of conditionals	25
2.2.5 Conclusion	25
2.3 Truth-conditional meaning of conditionals	26
2.3.1 Introduction	26
2.3.2 Material implication	27
2.3.3 Paradoxes of material implication	31
2.3.4 Conclusion	35
2.4 Non-truth-conditional meaning of conditionals	37
2.4.1 Introduction	37
2.4.2 Grice's model of meaning	37
2.4.3 Conventional implicature	40
2.4.4 Conversational implicature	41

2.4.5	Non-truth-conditional meaning	42
2.4.6	A note on conventional meaning and conventional implicature	44
2.4.7	Conclusion	53
2.5	Unassertiveness of conditionals	54
2.5.1	Introduction	54
2.5.2	Uncertainty, hypotheticality and unassertiveness	55
2.5.3	Unassertiveness and givenness	58
2.5.4	Unassertiveness and counterfactuality	64
2.5.5	Conclusion	72
2.6	Connectedness in conditionals	73
2.6.1	Introduction	73
2.6.2	Connection between antecedent and consequent	73
2.6.3	Connectedness as defeasible non-truth-conditional meaning	75
2.6.4	Connectedness as conventional non-truth-conditional meaning	81
2.6.5	Conditional perfection	87
2.6.6	Conclusion	89
2.7	Research questions	90
2.8	Conclusion	91
3	Classifications of conditionals	93
3.1	Introduction	93
3.2	Types of unassertiveness	94
3.2.1	Introduction	94
3.2.2	Present, past and future conditions	94
3.2.3	Logical, anticipatory, ideal and unreal conditionals	96
3.2.4	Implicative and non-implicative conditionals	98
3.2.5	Real, unreal, potential and future conditionals	99
3.2.6	Open and closed conditionals	100
3.2.7	Factual, future and imaginative conditionals	103
3.2.8	Factual and theoretical conditionals	106
3.2.9	Open and remote conditionals	111
3.2.10	Conditionals, hypotheticals and counterfactuals	114
3.2.11	Conclusion	117
3.3	Types of connection	118
3.3.1	Introduction	118
3.3.2	A note on ‘biscuit conditionals’	119
3.3.3	Telling, decision, performance and knowledge connections	120
3.3.4	Direct, indirect and rhetorical conditionals	124
3.3.5	Complete, partial and non-determinate conditionals	128
3.3.6	Now and not-now conditionals	130
3.3.7	Content, epistemic and speech-act conditionals	133
3.3.8	Polarity, source of coherence and segment order in conditionals	140

3.3.9	Hypothetical, course-of-event and pragmatic conditionals	142
3.3.10	Event and premise conditionals	148
3.3.11	Case-specifying and rhetorical conditionals	150
3.3.12	Conclusion	156
3.4	Conclusion	157
4	Data selection and methodology	159
4.1	Introduction	159
4.2	Reliability of classification	160
4.2.1	Introduction	160
4.2.2	Evaluating reliability	161
4.2.3	Data and method	164
4.2.4	Results	164
4.2.5	Conclusion	172
4.3	A corpus-based approach to conditional constructions	173
4.3.1	Introduction	173
4.3.2	Constructions and corpora	173
4.3.3	A bottom-up approach to conditional constructions . . .	175
4.3.4	Classification and clustering	178
4.3.5	Conclusion	179
4.4	Corpus setup	180
4.4.1	Introduction	180
4.4.2	Population and representativeness	180
4.4.3	Balance, mode and register	182
4.4.4	Identification of conditional <i>als</i> -sentences	184
4.4.5	Final sampling frame	191
4.4.6	Conclusion	193
4.5	Corpus annotation	194
4.5.1	Introduction	194
4.5.2	Reliability measures	194
4.5.3	Calculation of agreement	196
4.5.4	Non-necessary features and missing values	197
4.5.5	Results of agreement calculations	198
4.5.6	Conclusion	200
4.6	Data analysis	200
4.6.1	Introduction	200
4.6.2	Data presentation	200
4.6.3	Analysis of individual feature distributions	201
4.6.4	Conclusion	203
4.7	Conclusion	203
5	Grammatical features of Dutch conditionals	205
5.1	Introduction	205
5.2	Clause order	206
5.2.1	Introduction	206

5.2.2	Clause orders	206
5.2.3	Inter-rater reliability	212
5.2.4	Distribution of clause orders	213
5.2.5	Comparison with previous studies	216
5.2.6	Conclusion	220
5.3	Syntactic integration	221
5.3.1	Introduction	221
5.3.2	Patterns of syntactic integration	221
5.3.3	Inter-rater reliability	225
5.3.4	Distribution of syntactic integration patterns	226
5.3.5	Comparison with previous studies	229
5.3.6	Conclusion	234
5.4	Verb tense	234
5.4.1	Introduction	234
5.4.2	Verb tenses	235
5.4.3	Inter-rater reliability	238
5.4.4	Distribution of tenses	240
5.4.5	Comparison with previous studies	244
5.4.6	Conclusion	251
5.5	Modality	251
5.5.1	Introduction	251
5.5.2	Markers and types of modality	252
5.5.3	Inter-rater reliability	255
5.5.4	Distribution of modality types	257
5.5.5	Comparison with previous studies	260
5.5.6	Conclusion	270
5.6	Aspect	271
5.6.1	Introduction	271
5.6.2	Situation types	271
5.6.3	Inter-rater reliability	276
5.6.4	Distribution of situation types	278
5.6.5	Comparison with previous studies	280
5.6.6	Conclusion	284
5.7	Person and number	284
5.7.1	Introduction	284
5.7.2	Person and number	285
5.7.3	Inter-rater reliability	287
5.7.4	Distribution of person and number	289
5.7.5	Comparison with previous studies	292
5.7.6	Conclusion	294
5.8	Sentence type	295
5.8.1	Introduction	295
5.8.2	Sentence types	295
5.8.3	Inter-rater reliability	297
5.8.4	Distribution of sentence types	298

5.8.5 Comparison with previous studies	300
5.8.6 Conclusion	308
5.9 Negation	308
5.9.1 Introduction	308
5.9.2 Types of negation	309
5.9.3 Inter-rater reliability	310
5.9.4 Distribution of negation types	313
5.9.5 Comparison with previous studies	316
5.9.6 Conclusion	319
5.10 Focus particles	320
5.10.1 Introduction	320
5.10.2 Types of focus particles	321
5.10.3 Inter-rater reliability	325
5.10.4 Distribution of focus particle types	326
5.10.5 Comparison with previous studies	329
5.10.6 Conclusion	334
5.11 Conclusion	335
6 Clusters of conditionals	339
6.1 Introduction	339
6.2 Constructions and classification	340
6.2.1 Introduction	340
6.2.2 Conditionals as constructions	341
6.2.3 Classification, analysis, and cognition	344
6.2.4 Intensional and extensional classification	347
6.2.5 Evaluation of classifications	350
6.2.6 Conclusion	352
6.3 Data preparation, variable selection, and distance calculation	353
6.3.1 Introduction	353
6.3.2 Initial variable selection	354
6.3.3 Basic distance calculation	357
6.3.4 Probability-based distance calculation	361
6.3.5 Selection and evaluation of distance measures	364
6.3.6 Final variable selection	368
6.3.7 Identification of representative conditionals	370
6.3.8 Conclusion	374
6.4 Clustering and evaluation	375
6.4.1 Introduction	375
6.4.2 Clustering algorithms	375
6.4.3 Measures of cluster evaluation	378
6.4.4 Hierarchical clustering	379
6.4.5 Partitional clustering	381
6.4.6 Conclusion	383
6.5 Analysis of hierarchical clusters	383
6.5.1 Introduction	383

6.5.2	Clusters and feature distributions	384
6.5.3	A note on comparing clusters and types	387
6.5.4	Unmarked or default conditionals (cluster 3)	388
6.5.5	Conditionals with antecedents marked for modality (cluster 1)	390
6.5.6	Past tense conditionals with modalised consequents (cluster 2)	391
6.5.7	Conditionals with present perfect antecedents (cluster 4)	393
6.5.8	Additional clusters	395
6.5.9	Conclusion	396
6.6	Analysis of partitional clusters	398
6.6.1	Introduction	398
6.6.2	Clusters and feature distributions	399
6.6.3	Unmarked conditionals (cluster 2)	402
6.6.4	Conditionals with modalised consequents (cluster 1)	404
6.6.5	Resumptive, non-integrated and sentence-medial conditionals (cluster 3)	405
6.6.6	Conclusion	408
6.7	Conclusion	409
7	Conclusion and discussion	413
7.1	Introduction	413
7.2	Overview of main findings	414
7.2.1	Introduction	414
7.2.2	Semantics and pragmatics of conditionals	414
7.2.3	Classifications of conditionals	415
7.2.4	Data selection and methodology	416
7.2.5	Features of conditional constructions in Dutch	417
7.2.6	Clusters of conditionals	417
7.2.7	Conclusion	419
7.3	Discussion: clusters and constructions	419
7.3.1	Introduction	419
7.3.2	Top-down and bottom-up classification	420
7.3.3	Constructions and implicatures	422
7.3.4	Language specificity	424
7.3.5	Conclusion	428
7.4	Prospects: an argumentative approach	429
7.4.1	Introduction	429
7.4.2	An argumentative approach to language	429
7.4.3	An argumentative approach to conditionals	432
7.4.4	Conclusion	435
7.5	Final remarks	436
Appendices		439

A Annotation guidelines (features)	441
A.1 Introduction	441
A.2 General instructions	441
A.2.1 Natural language data are messy	441
A.2.2 Interpretational features	442
A.2.3 Practical advice	442
A.2.4 File format	442
A.2.5 Contact	442
A.3 Clause order	443
A.3.1 Introduction	443
A.3.2 Instructions	443
A.3.3 Problem cases	444
A.4 Syntactic integration	445
A.4.1 Introduction	445
A.4.2 Instructions	446
A.4.3 Problem cases	447
A.5 Tense	447
A.5.1 Introduction	447
A.5.2 Instructions	449
A.5.3 Problem cases	451
A.6 Modality	452
A.6.1 Introduction	452
A.6.2 Instructions	452
A.6.3 Problem cases	453
A.7 Aspect	455
A.7.1 Introduction	455
A.7.2 Instructions	456
A.7.3 Problem cases	458
A.8 Person and number	460
A.8.1 Introduction	460
A.8.2 Instructions	461
A.8.3 Problem cases	462
A.9 Sentence type	463
A.9.1 Introduction	463
A.9.2 Instructions	464
A.9.3 Problem cases	465
A.10 Negation	466
A.10.1 Introduction	466
A.10.2 Instructions	466
A.10.3 Problem cases	468
A.11 Focus particles	469
A.11.1 Introduction	469
A.11.2 Instructions	469
A.11.3 Problem cases	470

B Feature distributions	471
B.1 Introduction	471
B.2 Feature distributions by mode and register	471
C Data preparation	485
C.1 Introduction	485
C.2 Feature independence and skewedness	485
C.3 Coded variables and deviation from the mode	487
C.4 Initial variable selection	491
C.5 Distance calculation	495
C.5.1 Basic distance calculation	495
C.5.2 Evaluation of distance matrices by multimodality	498
C.5.3 Evaluation of distance matrices by dimension-reduction	501
C.6 Final variable selection	508
D Cluster evaluations	511
D.1 Introduction	511
D.2 Measures of cluster evaluation	511
D.3 Evaluation of hierarchical cluster solutions	513
D.4 Evaluation of partitional cluster solutions	522
D.5 Dendrogram of hierarchical clustering	528
E Annotation guidelines and experimental materials (classifications)	531
E.1 Introduction	531
E.2 Quirk et al.'s (1985) classification	531
E.2.1 Introduction	531
E.2.2 Instructions	532
E.2.3 Problem cases	536
E.3 Athanasiadou and Dirven's (1996) classification	537
E.3.1 Introduction	537
E.3.2 Instructions	538
E.3.3 Problem cases	541
E.4 Dancygier and Sweetser's (2005) classification	541
E.4.1 Introduction	541
E.4.2 Instructions	542
E.4.3 Problem cases	547
E.5 Average agreement per corpus item	548
E.6 Materials	548
F Supplementary Materials	557
Bibliography	559
Samenvatting in het Nederlands	615

Acknowledgements

Although writing this dissertation was at times a solitary experience, I have been fortunate to be supported by many people. I would like to take the liberty to thank them and to acknowledge the importance of having bright, kind and loving people around.

Sincere gratitude goes to my promotor Arie Verhagen for his encouragement, and for sharing his knowledge and insights on linguistics and topics well beyond. His lectures were an important instigator for pursuing a PhD, and I value the academic and personal advice he has given me. I would also like to thank my co-promotor Ronny Boogaart, who has supported and motivated me, and who has shared with me his extensive knowledge of linguistics. He also taught me important values in life, and became a friend with whom I could talk about virtually anything. I could not have wished for better support.

My appreciation goes to NWO for funding this research, and to my *alma mater* Leiden University and its gifted lecturers for their insights and enthusiasm. I am also grateful to LUCL, especially to Sjef Barbiers, Maarit van Gammeren, Gijsbert Rutten, and Niels Schiller for their help, and to Henrike Jansen for support and the tea talks that brightened up many days of corpus annotation. Ton van der Wouden and Barend Beekhuizen provided feedback on several parts of this dissertation, for which I am very grateful. Furthermore, for collegiality and friendliness, I would like to thank Maaike Beliën, Louise Cornelis, Jenny Doetjes, Egbert Fortuin, Ton van Haaften, Maarten van Leeuwen, Saskia Lensink, Katja Lubina, Olga van Marion, Esther Op de Beek, Roosmaryn Pilgram, Tanja Simons, Marina Terkourafi, Ingrid Tieken, Vivien Waszink, and Marijke van der Wal. I would also like to thank my fellow PhD's Kate Bellamy, Eleanor Dutton, Aliza Glasbergen-Plas, Lena Karovovskaya, Olga Kepinska, Morana Lukač, Maaike van Naerssen, Bobby Ruijgrok, Benjamin Suchard, Alexander Vertegaal, and Cesko Voeten for being there and sharing experiences, and Þorbjörg Þorvaldsdóttir and Aljoša Šorgo for co-organising the Linguistics Movie Nights. Thanks also go to Maarten Bogaards, who aided in the corpus annotation during an internship. I would like to thank my fellow lin-

guists for everything I learned during numerous conferences and the meetings of the National Graduate School of Linguistics, Vaclav Brezina, Andrew Hardie, and Tony McEnery for insights gained during the summer schools on Corpus Linguistics of 2015 and 2016 in Nottingham and Lancaster, Martin Hilpert and Natalia Levshina for sharing their knowledge at the Societas Linguistica Europaea (SLE) Summer School of 2017 in Neuchâtel, and Adele Goldberg, Anne Bezuidenhout and Stefan Th. Gries for insightful lectures and for discussing parts of this dissertation at the Linguistic Society of America (LSA) Institute of 2019 in California. Thanks also go to the students in Leiden. I believe we have learned a lot from each other.

I would like to thank my family and friends for their love and care. Gratitude goes to my father Leo, for planting a seed that grew into a keen interest in pragmatics by frequently ending what some would call ill-formed utterances with *Je begrijpt toch wat ik bedoelt?*, and my mother Mary for believing in me and for always being there. I also want to mention my brother and sisters, especially Sandra and her family, who have been a great support and inspiration in difficult times. I am grateful for the care of my parents-in-law, Conny and Stanley Rieborn, who have taught me that caring for others does not have to go at the expense of taking care of oneself. I would like to thank Sophie Konings, Julien Groenenboom, Laurens Dorival, Erik Ekkelenkamp, and Raymond Matai for their friendship. A warm thank you also goes to Michiel Hopman, who always took time for a cup of coffee – freshly brewed, or, if need be, heated up on a camping stove. Thanks go to my fellow runners at AV Fortuna and Rotterdam Atletiek for politely listening to endless musings on linguistics during long runs and between intervals, and especially to Carla Ophorst for advice on and beyond athletics. I would like to thank my former manager Petra Visser for the opportunities she provided, and, together with Theo Mak, for teaching me to trust myself, and to see the good in others.

Finally, and most importantly, I would like to express immense gratitude to my wife, Eva Rieborn. Without your love, support, and almost limitless patience, I could not have completed this dissertation, and my life would not have been as rich and loving as I feel it is now. Writing a dissertation was a daunting task, and proved a great burden on you too. Having someone to rely on, talk to, and to be around has been essential. You made it bearable and I cannot thank you enough. I look forward to all that lies ahead for us.

Symbols and notation conventions

The symbols used in this dissertation are based mainly on Huang (2017), Levinson (2000), and Magnus (2015) and adapted to fit current purposes.

<i>p</i>	proposition p
<i>q</i>	proposition q
⊤	truth-conditionally true
⊥	truth-conditionally false
→	ordinary conditional (natural language <i>if</i>)
▷	material conditional (logical <i>if</i>)
≈	conventional truth-conditional meaning
≈̃	conventional non-truth-conditional meaning
+>>	conventional implicature
+>	conversational implicature
¬, ~	negation
∧	conjunction (logical <i>and</i>)
∨	disjunction (logical <i>or</i>)
↔	equivalence (<i>iff</i> , ‘if and only if’)
?̄	definite description
Qn ₂ +>	conversational implicature through second sub-maxim of maxim of quantity (cf. Grice, 1989; letters for maxim, number for sub-maxim)
#	infelicitous utterance
*	ungrammatical sentence
?	questionable utterance or sentence