

# CURRICULUM VITAE

## Personal

Name: Sjoerd D. Zwart  
Date of birth: May 30, 1963  
Office: Jaffalaan 5, 2628 BX, Delft, The Netherlands  
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## Employment

2002 Assistant professor, Department Philosophy and Ethics, Eindhoven, University of Technology,  
2000 – 2004 Post doc Grotius Fellow, Department of Philosophy, University of Amsterdam,  
1997 (dec) Assistant professor, Department of Philosophy, Delft, University of Technology,  
1997 – 1999 Research coordinator Applied Logic Laboratory University of Amsterdam.  
1991 – 1997 PhD researcher for The Netherlands Organization for Scientific Research at the Groningen University.

## Research interests

Philosophy of engineering sciences and logic, viz. methods of engineering design, functional and means-ends reasoning, socio-technical systems, tacit knowledge, models in engineering and argumentation theory in engineering ethics, theory of verisimilitude.

## Area of competence

Formal methods and philosophy of science, verisimilitude, philosophy of technology, logic, critical thinking, argumentation theory.

## Service to the profession

Referee for British Journal for the Philosophy of Science,  
International Studies in the Philosophy of Science,  
Studies in History and Philosophy of Science,  
Synthese section Knowledge, Rationality and Action,  
Ethics and Information Technology,  
Algemeen Nederlands Tijdschrift voor Wijsbegeerte,  
Proceedings of the “Models and Simulations 3” conference University of Virginia on March 6-8 2009. (<http://people.virginia.edu/~pwh2a/MS3.htm>)



## 2. Scientific Publications

### 2.1. Refereed international scientific journals

- Gerard R. Renardel de Lavalette and Sjoerd D. Zwart (2011) 'Belief Revision and Verisimilitude Based on Preference and Truth Orderings.' *Erkenntnis*, 75(2) 237-254, DOI 10.1007/s10670-011-9293-z.
- Luca Del Frate, Sjoerd D. Zwart, Peter A. Kroes (2011) 'Root Cause as a U-Turn'. *Engineering Failure Analysis*, 18(2) 747-759 DOI: 10.1016/j.engfailanal.2010.12.006.
- Van de Poel, I., and S.D. Zwart (2010) 'Reflective Equilibrium in R&D Networks'. *Science, Technology & Human Values*. 35(2), 174-199. doi:10.1177/ 0162243909340272
- Zwart, S.D. and M. Franssen (2007) 'An impossibility theorem for verisimilitude,' *Synthese* 158 1, pp. 75-92.
- Hughes, J., P. Kroes, and S.D. Zwart (2007) 'Means Ends Reasoning,' *Synthese* 158 2 (2007) pp. 207-231.
- Zwart, S.D., I. van de Poel, H. van Mil and M. Brumsen (2006) 'A Network Approach for Distinguishing Ethical Issues in Research and Development,' *Science and Engineering Ethics* 12, pp. 663-684.

### 2.2. Refereed national scientific journals

- Zwart, S.D. (2008) 'Van comparatieve ABV tot comparatief realisme'. *Algemeen Nederlands Tijdschrift voor Wijsbegeerte* 100, pp. 663-684.

### 2.3. Books

- Zwart, S. D. (2001) *Refined Verisimilitude*. Dordrecht (2001) Kluwer.
- Zwart, S. D. (1998) *Approach to the Truth: Verisimilitude and Truthlikeness*. Dissertation in the ILLC Dissertation Series 1998-02, Delft, 1998.

### 2.4. Book chapters

- Kreuk, M de, Poel, IR van de, Zwart, S.D. and M.C.M. van Loosdrecht (2010) 'Ethics in innovation: cooperation and tension.' In I.R. van de Poel and D.E. Goldberg (Eds.), *Philosophy and engineering: an emerging agenda*. Dordrecht / New York / Berlin: Springer, pp. 215-226.
- Zwart, S. D. (2009a) 'Introduction to Part IV: Modelling in engineering sciences.' In A.W.M. Meijers, H. Radder, W. Houkes, P.A. Kroes, S.D. Zwart, I.R. van de Poel and S.O. Hansson (Eds.), *Philosophy of technology and engineering sciences*. Burlington, MA/Oxford/Amsterdam: North-Holland, 2009 pp. 633-636.
- Zwart, S. D. (2009b) 'Scale Modelling in Engineering: Froude's Case.' In A.W.M. Meijers, H. Radder, W. Houkes, P.A. Kroes, S.D. Zwart, I.R. van de Poel & S.O. Hansson (Eds.), *Philosophy of technology and engineering sciences*. Burlington, MA/Oxford/Amsterdam: North-Holland, pp. 759-798.

- Zwart, S. D. (2005) 'Updating Theories' in Roberto Festa , Atocha Aliseda and Jeanne Peijnenburg (Eds.) *Confirmation, Empirical Progress, and Truth Approximation. Essays in Debate with Theo Kuipers. Volume 1*. Rodopi, Amsterdam, New York, p. 375-395
- Van de Poel, I., S.D. Zwart, M. Brumsen and H.G.J. van Mil (2005) 'Risks of Aerobic Granular Sludge Technology; ethical and methodological aspects', in S. Bathe et al (eds) *Aerobic Granular Sludge*, London IWA Publishing, p.143-154.
- Royakkers, L. and Zwart S.D. (2004) 'Argumentatieleer.' In: L. Royakkers, I.R. van de Poel & A. Pieters, eds., *Ethiek & Techniek. Morele overwegingen in de ingenieurspraktijk*. Baarn: HB-uitgevers, pp. 82-99.
- Zwart, S. D. (1995) 'A Hidden Variable in the Discussion about "Language Dependency" of Truthlikeness', in T. A. F. Kuipers and A. R. Mackor, (eds) *Cognitive patterns in Science and Common sense, Poznan Studies in the Philosophy of the Sciences and the Humanities* 46, Rodopi, Amsterdam, p.249-272.
- Zwart, S. D. (1993) 'Waarheidsgelijkenis: Twee Theoriekeuzeregels Vergeleken'. in: W. van Dooren en T. Hoff (red.) *Aktueel filosoferen*, Eburon Delft, p 61-68.

## 2.5. Editorship

- Zwart, S.D. (2009) (Ed.) "Modeling in Engineering Sciences." Part IV of *Philosophy of technology and engineering sciences*. pp. 633-879, Amsterdam: North-Holland.

## 2.6. Proceedings

- Renssen, A. van, P. E. Vermaas and S. D. Zwart (2007), "A taxonomy of functions in Gellish", in *Proceedings of the 16th International Conference on Engineering Design ICED07*, p. 1-10. Cité des Sciences et de l'Industrie, Paris, France, 28 - 31 August. ISBN 1-904670-02-4. Abstracts ISBN 1-904670-01-6.
- Franssen, M., and S.D. Zwart (2007) 'Quantitative verisimilitude and the content-likeness distinction.' In *Proceedings of the 13th International Congress of Logic Methodology and Philosophy of Science*, p. 312-313. Tsinghua University, Beijing, China, August 9-15.
- Poel, I.R. van de, Brumsen, M., Zwart, S.D., & Mil, H.G.J. van (2004), 'Normative reflections on sociotechnical networks in the development of a new wastewater treatment reactor in the Netherlands.' In: *2004 Workshop on New Directions in Understanding Ethics and Technology*, University of Virginia, 1 November.
- Zwart, S.D. (2004) *The Carnot Cycle; a thought experiment in the engineering sciences*. Gent on Thought experiments. <http://logica.rug.ac.be/TER/abstracts/zwart.pdf>
- Zwart, S.D. and M. Franssen (2003) Verisimilitude, Truthlikeness and Arrow's Theorem. In *12th International Congress of Logic, Methodology and Philosophy of Science* (pp. 281-282). Oviedo: 12th International Congress of Logic, Methodology and Philosophy of Science
- Zwart, S.D. (2000) 'Geloofsrevisie en waarheidsgelijkenis.' In: J. Sleutels, ed., *Elektrische acta van de 22e Nederlands-Vlaamse filosofiedag* Leiden, The Netherlands, 28 October 2000. <http://www.leidenuniv.nl/philosophy/publicaties/overige/filosofiedag/acta/zwart.pdf>
- Zwart, S. D. (1995) 'Truthlikeness and Preference Logic' *Proceedings of the Tenth International Congress of Logic, Methodology and Philosophy of Science*, Florence (1995) p.195.

## 2.7. Professional Publications

Van Mil, H., I. van de Poel en S.D. Zwart, 'Ethiek in de afvalwaterzuivering' *H<sub>2</sub>O* 39 4 (2006) pp. 22-24.

Zwart, S. D. (1998) 'Logica en Argumentatietheorie; Hoe Aristoteles' Drogredenleer te Overtreffen'. Bespreking *Logic and Argument*, van Benthem, van Eemeren, Grootendorst en Veltman (eds) KNAW verhandelingen deel 170. *Algemeen Nederlands Tijdschrift voor Wijsbegeerte* 90 1, p. 86-88.

Zwart S.D. (1993) 'Everything you always wanted to know about the  $\lambda$ - $\alpha$  systems of Carnap and Hintikka'. Manuscript Faculteit der Wijsbegeerte van de RUG.

## 3. Grants and Fund raising

### 3.1. 'Methods and Techniques' at the Faculty Mechanical, Maritime and Materials Engineering

2011—2012 Project to set up an inventory of methods and techniques (20 kEuro)

### 3.2. Platform Electro Magnetic Fields

2008 –2009 Philosophy of Science advisory for Platform Electro Magnetic Fields (10 kEuro)

### 3.3. Netherlands Defence College (IDL) Rijswijk

2005—2007 Courses Philosophy of Science and Argumentation at a military academy (17 kEuro)

### 3.4. Netherlands Organization for Scientific Research

Co-author of the research application Responsibility

1991—1996 Acquisition of a four years PhD-Research grant.

## 4. Presentations

### 4.1. On invitation

*Collins' Classification of Tacit Knowledge: Interpretation and Discussion* (co-intervention with Léna Soler), University of Nancy (France), International Conference "Tacit Knowledge in Science: Discussions with Harry Collins", organized by the PratiScienS group, December 12, 2011.

*Ethics of modeling in engineering design* Erasmus Institute for Philosophy and Economics (EIPE) Research seminar at the Erasmus University. Rotterdam, 12 April 2010.

*Reaction on Roberto Festa's 'Verisimilitude as transmitted information about the basic features of the world'* at the 'Realism, Probability, Truth Approximation Symposium' in honour of

Theo Kuipers Februari 28, 2010.

*Verisimilitude and Social Choice, with Maarten Franssen.* Invited lecture, ILLC, Amsterdam University, Amsterdam 20 Maart 2008.

*Arrow on Verisimilitude: Limits on truthlikeness.* Invited lecture, Colloquium Theoretical Philosophy, Faculty of Philosophy Oude Boteringestraat 52, room Omega, Groningen, 20 February 2008.

*Engineering theories of Carnot and Turing.* Invited lecture. KIVI May, 3, 2006.

*Verisimilitude and Truthlikeness.* Invited lecture at the ALL/CCSOMM June 18 1997.

*Refined Content Orders.* Presentation of Research, June 18, 1998 on invitation of Grolog.

*Truth approximation; a combined measure on propositions.* Lecture on main results of PhD thesis, *Approach to the truth*; on invitation of the Logica Vereniging Nederland: 22 nov 1997

*Language and Induction.* Lecture on invitation on June 8, 1993 at the *Platform Formal Methods* (Faculty of Mathematics and Information sciences University of Groningen).

#### 4.2. Other

*Models as Artifacts: The Neutrality Thesis for Engineering Models* EPSA 2011, Athens, October 5-8, 2011.

*Instrumental System as a Sui Generis Kind of System Central to Engineering Design* with Maarten Franssen 14th Congress of Logic, Methodology and Philosophy of Science, Nancy, July 19-26, 2011.

*A Formal Framework for Refined Verisimilitude and Belief Revision,* EPSA2009, Amsterdam October 2009.

*A taxonomy of functions in Gellish English,* with Andries van Renssen, Pieter E. Vermaas. International Conference On Engineering Design, Iced'07, Cité Des Sciences Et De L'industrie, Paris, France, 28 - 31 August 2007.

*Quantitative verisimilitude and the content-likeness distinction,* with Maarten Franssen. 13th International Congress of Logic Methodology and Philosophy of Science Tsinghua University, Beijing, China, August 9-15, 2007

*Impossibility theorem for Verisimilitude,* 31st Annual Philosophy of Science Conference, Inter-University Centre, Dubrovnik, 11-15 april 2005.

*The Carnot Cycle; a thought experiment in the engineering sciences.* Gent on Thought experiments 2004.

*Arrow on Verisimilitude* 7-13 August 2003 LMPS03/ Oviedo.

*Beliefrevision and Truthlikeness.* October 28, 2000 Leiden 22e Dutch-Flemish Philosophy Day.

*Replies during workshop Verisimilitude and its Relatives* July 3, 1998 in Groningen, PhD defense, 2 juli 1998.

*Kuipers' Paraphrase of theories Overloaded.* June 14, 1997, Nias te Wassenaar. At the occasion of the 50<sup>th</sup> anniversary of Prof. T.A.F. Kuipers.

*Refined Verisimilitude.* Presentation of last chapter of *Approach to the truth* at the *International Congress of Logic, Methodology and Philosophy of Science*, Florence august 1995 p. 195.

*Truthlikeness: comparison of two rules of theory choice.* Lecture at the 15<sup>th</sup> Dutch-Flemish Day of Philosophy, October 1, 1993, Delft.

*A caveat about "essential" property comparisons.* Lecture at the Congress for General and Special Philosophy of Science, May 14-16, 1993 ISVW, Leusden. Reaction on W.K.B. Hofstee's *Theory overtaken?*

*Formal methods in the Philosophy of Science.* Research colloquium May 12, 1993 Faculty of Philosophy, Groningen University.

*Everything you always wanted to know about Carnap and Hintikka's 8(-) systems.* Introduction to Carnap and Hintikka's 8(-) systems. April 28, 1993 Faculty of Philosophy Groningen University.

## 5. Conference and Workshops

*EthoM 2010, Workshop on the Ethics of Modeling,* January 10-11, 2010. TPM, Delft University of Technology. Invited speakers: Marc Le Menestrel, J.P.C. Kleijnen, Dr. Paolo Gardoni, Colleen Murphy, Susan G. Sterrett, Ibo v/d Poel

*Workshop on Modeling and Ethics,* June 12, 2009. TPM, Delft University of Technology. Invited speakers: Urjan Jacobs (together with I. v/d Poel and S.D. Zwart) Kees van Overveld, Sjoerd D. Zwart and Martin Peterson.

## 6. Teaching

### 6.1. Structural courses (Delft University of Technology)

WM0318TN - Argumentation and Philosophy of Science

WBTP303 - Bachelors Research and Design Project

### 6.2. Structural courses (Eindhoven University of Technology)

0FC02 - Philosophy of science (Eindhoven University of Technology)

0FC33 - Logic and argumentation theory

0L863 - Argumentation for Electrical Engineering