

NEUKANTIANISMUS-FORSCHUNG AKTUELL

NEUERSCHEINUNGEN, TAGUNGEN, VERMISCHTES

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1 NEUKANTIANISMUS-FORSCHUNG 2012

I. VERÖFFENTLICHUNGEN 2012

a) Primärliteratur (Editionen und Übersetzungen)

- Cassirer, Ernst: *Filozofia Oświecenia* (=Die Philosophie der Aufklärung). Übers. v. Tadeusz Zatorski, Warszawa.
- Cassirer, Ernst: *Individuo e cosmo nella filosofia del Rinascimento*, a cura di Friederike Plaga e Claus Rosenkranz, introduzione di Maurizio Ghelardi, tr. it. e curatela di Giovanna Targia, Bollati Boringhieri, Torino.
- Cohen, Hermann: *Kants Theorie der Erfahrung*. Übersetzung aus dem Deutschen ins Russische v. Belov, Moskau.
- Cohen, Hermann: *Kantowska teoria doświadczenia* (=Kants Theorie der Erfahrung). Übers. v. Andrzej J. Noras. Kęty.
- Ulbrich, Bernd / Lindemann, Albrecht (Hrsg.): *Hermann Cohen: Ein Lesebuch*, Dessau-Roßlau.
- Cohen, Hermann: *Werke 12, Kleinere Schriften I (1865-1869)*, bearbeitet von Wiedebach und Holzhey. Olms, Hildesheim u.a.
- Simmel, Georg: *Filozofia pieniądza* (=Philosophie des Geldes). Übers. v. Andrzej Przyłębski, Warszawa.
- Simmel, Georg: *Goethe*, tr. it. a cura di Michele Gardini. Quodlibet, Macerata.
- Simmel, Georg: *Metafisica della morte e altri scritti*, tr. it. a cura di Lucio Perucchi. SE, Milano.

b) Sekundärliteratur

1. Monographien und Dissertationen

- Adelmann, Dieter: *Einheit des Bewußtseins als Grundproblem der Philosophie Hermann Cohens: vorbereitende Untersuchung für eine historisch-verifizierte Konfrontation der Fundamentalontologie Martin Heideggers mit Hermann Cohens "System der Philosophie"*. Universitätsverlag Potsdam, Potsdam.
- Cecchetto, Francesca: *Distruggere e costruire. Heidegger e Cassirer a Davos*, presentazione di Gian Luigi Paltrinieri, Il Poligrafo, Padova.
- Hartung, Gerald: *Sprach-Kritik. Sprach-und kulturtheoretische Reflexionen im deutsch-jüdischen Kontext*. Weilerswist, Velbrück.
- Kohler, George Y.: *Reading Maimonides' Philosophy in 19th Century Germany. The Guide to Religious Reform*. Springer, Dordrecht/New York.
- La Sala, Beate Ulrike: *Hermann Cohens Spinoza-Rezeption*. Freiburg / München, Alber.
- Lisak, Andrzej: *Filozofia transcendentálna między Heglem a Heideggerem. Od teorii poznania do ontologii* (=Transcendental Philosophy between Hegel and Heidegger. From Epistemology to Ontology), Gdańsk.
- Matteucci, Giovanni: *L'artificio estetico. Moda e bello naturale in Simmel e Adorno*, Mimesis, Milano-Udine.
- Mironova, K. Ju.: *Gavriil Osipovitsch Gordon in der Geschichte des russischen Neukantianismus*, Saratover Universität. (Dissertation).
- Noras, Andrzej J.: *Historia neokantyzmu* (=Die Geschichte des Neukantianismus), Katowice.

- Pankova, T. Ju.: Historisch-philosophisches Erbe von B.V. Jakovenko in der russischen philosophischen Tradition, Moskauer Pädagogische Staatliche Universität. (Dissertation).
- Petrella, Daniele: La "silenziosa esplosione del neokantismo". Emil Lask e la mediazione della fenomenologia di Husserl, Aracne, Roma.
- Pietras, Alicja: W stronę ontologii. Nicolaia Hartmanna i Martina Heideggera postneokantowskie projekty filozofii (=In Richtung der Ontologie. Die postneukantische Projekte der Philosophie von Nicolai Hartmann und Martin Heidegger), Kraków.
- Ples, Marta: Od epistemologii do krytycznej analizy dziejów. Studium filozofii Léona Brunschvicga (=Von der Epistemologie bis zur kritischen Analyse der Geschichte. Das Studium der Philosophie von Léon Brunschvicg), Katowice.
- Poma, Andrea: Der kritische Philosophie von Hermann Cohen. Übersetzung aus dem Italienischen ins Russische von O. Popova. Moskau.
- Resende Jr., José: Auf der Suche nach einer Sinntheorie: Rickert, Husserl und Lask (Em busca de uma teoria do sentido: Rickert, Husserl e Lask), São Paulo: Educ Verlag (Brasilien).
- Rozzoni, Claudio: Per un'estetica del teatro. Un percorso critico. Testi di Simmel, Merleau-Ponty, Fink, Deleuze, Mimesis, Milano-Udine.
- Weiss, Daniel H.: Paradox and the Prophets. Hermann Cohen and the Indirect Communication of Religion. Oxford University Press.
- Wiedebach, Hartwig: The National Element in Hermann Cohen's Philosophy and Religion. Leiden/Boston, Brill.
- Zagirnjak, M. Ju.: Die philosophisch-juristische Idee von S. I. Hessen: historisch philosophischer Kontext, Moskauer Pädagogische Staatliche Universität. (Dissertation).

2. Aufsätze (sofern einzeln gemeldet)

- Belov, Vladimir: Russischer Neukantianismus: Geschichte und Besonderheit der Entwicklung, in: Kantische Sammlung [Kantovskij sbornik] 1(39), 27-39.
- Belov, Vladimir: V. E. Sesemann – Systematik des russischen Neukantianismus, in: Fragen der Philosophie 4, 121-126.
- Belov, Vladimir / Dudyschkin, Vladimir: Neukantianismus deutscher und russischer: zwischen Erkenntnistheorie und Kulturkritik, in: Fragen der Philosophie 5, 180-182.
- Bonaldi, Claudio: Cassirer e la Bibbia. La dialettica religiosa di immanenza e trascendenza e la dinamica simbolica, in: M. C. Bartolomei (Hg.), La filosofia e il Grande Codice. Fissità dello scritto – Libertà del pensiero?, Claudiana, Torino, 93-103.
- Bonaldi, Claudio: Cassirer, Bergson e lo "spazio" della mediazione. La metafisica tra immanenza e trascendenza, in: Annuario filosofico XXVII (2012), 241-267.
- Ermischin, Oleg: Auf der Suche nach den überpersönlichen Geltungen: der philosophische Weg von S. I. Hessen, in: Philosophische Wissenschaften 8, 97-109.
- Favuzzi, Pellegrino: Coskun, D.: Law as Symbolic Form. Ernst Cassirer and the Anthropocentric View of Law (Rezension), in: Universa – Recensioni di filosofia 2, 1 (2012).
- Favuzzi, Pellegrino: Meyer, T.: Kulturphilosophie in gefährlicher Zeit. Zum Werk Ernst Cassirers (Rezension), in: Universa – Recensioni di filosofia 1, 2 (2012).
- Favuzzi, Pellegrino: Parkhomenko, R.: Cassirers politische Philosophie. Zwischen allgemeiner Kulturtheorie und Totalitarismus-Debatte (Rezension), in: Universa – Recensioni di filosofia 1, 1 (2012).

- Favuzzi, Pellegrino: Skidelsky E.: Ernst Cassirer. The Last Philosopher of Culture (Rezension), in *Rivista di storia della filosofia* 2012, 2, 436-438.
- Gigliotti, Gianna: *Fenomenologia e neokantismo*, in: Antonio Cimino, Vincenzo Costa (a cura di), *Storia della fenomenologia*, Carocci, Roma.
- Isupov, K. H.: Die Ästhetik von F. A. Stegun, in: *Fragen der Philosophie* 10, 98-108.
- Kantor, Vladimir: Ertragend der deutschen Katastrophe: Stegun und Tillich, in: *Fragen der Philosophie* 11, 114-121.
- Krijnen, Christian: ‚Back to Kant‘: Neo-Kantianism, in: *The Continuum Companion to Kant*, ed. G. Banham/D. Schulting/N. Helms, London/New York, 297-303.
- Krijnen, Christian: Bedeutung, in: *Handbuch Kulturphilosophie*, hrsg. v. R. Konersmann, Stuttgart, 279-287.
- Krijnen, Christian: Metaphysik in der Realphilosophie Hegels? Hegels Lehre vom freien Geist und das axiotische Grundverhältnis kantianisierender Transzendentalphilosophie, in: *Metaphysik und Metaphysikkritik in der Klassischen Deutschen Philosophie*, Hrsg. M. Gerhard/A. Sell/L. de Vos, Hamburg, 167-205.
- Kutscherenko, A. V.: Kant, Neukantianismus und die Vertretern der Phänomenologie über die Reflexion und die Reduktion, in: *Kantische Sammlung [Kantovskij sbornik]* 1(39), 7-13.
- Le Moli, Andrea: Platone e la Scuola di Marburgo. Ontologia e metafisica in Cohen, Natorp, Hartmann, in: *Epekeina*, vol. 1, nn. 1-2 (2012), pp. 7-26.
- Melich, Julija: Über die Mythen des silbernen Zeitalters und Heidelberg, in: *Fragen der Philosophie* 2, 49-59.
- Ognev, A. I.: Die Begründung der Moral bei Windelband (25. Januar 1910). Publikation von E.A. Butina aus dem Archiv von A.I. Ognev, in: *Kantische Sammlung [Kantovskij sbornik]* 3(41), 96-103.
- Sesemann, V. E.: Das Problem des Idealismus in der Philosophie. Übersetzung aus dem Deutschen ins Russische V. Belov, in: *Fragen der Philosophie* 4, 127-134.
- Soboleva, Maja: Zur Methodologie der Humanitätswissenschaften auf der Fahrt nach der Reform der Logik, in: *Kantische Sammlung [Kantovskij sbornik]* 3(41), 57-65.
- Sokuler, Zinaida: Cohen H. Kants Theorie der Erfahrung / Übersetzung aus dem Deutschen V. N. Belov. M., in: *Kantische Sammlung [Kantovskij sbornik]* 2(40), 112-115.
- Tetjuev, Leonid: A. Poma. Kritische Philosophie von Hermann Cohen, in: *Fragen der Philosophie* 6, 189-191.
- Zagirnjak, Michail: Der Geltungsbegriff bei Rickert und seine Interpretation in der Philosophie von S. I. Hessen, in: *Kantische Sammlung [Kantovskij sbornik]* 1(39), 40-44.

3. Tagungs- und Sammelbände

- Dober, Hans M. / Morgenstern, Matthias (Hrsg.): Religion aus den Quellen der Vernunft. Hermann Cohen und das evangelische Christentum, Tübingen, Mohr Siebeck (mit Aufsätzen von Hans M. Dober, Matthias Morgenstern, Ulrich Heckel, Hartwig Wiedebach, Édouard Robberechts, Myriam Bienenstock, Walter Sparr, Rudolf Smend, Gerald Hartung, Peter Fischer-Appelt, Jörg Dierken, Helmut Holzhey, Heinrich Assel, Friedrich Lohmann, Dietrich Korsch).
- Krijnen, Christian / Noras, Andrzej (Hg.): Marburg versus Südwestdeutschland. Philosophische Differenzen zwischen den beiden Hauptschulen des Neukantianismus, Königshausen & Neumann, Würzburg (mit Aufsätzen von Werner Flach, Sebastian Höger, Christian Krijnen, Tomasz Kubalica, Andrzej J. Noras, Stanley L. Paulson, Hartwig Wiedebach, Kurt Walter Zeidler).
- Lomonaco, Fabrizio (ed.): Simbolo e cultura. Ottant'anni dopo la Filosofia delle forme simboliche, Franco Angeli, Milano (mit Aufsätzen von: Claudio Bonaldi, Giuseppe Cacciatore, Giuseppe Cantillo, Francesca D'Alberto, Annabella D'Atri, Riccardo De Biase, Pellegrino Favuzzi, Massimo Ferrari, Giancarlo Magnano San Lio, Maurizio Martirano, Edoardo Massimilla, Christian Mockel, Giulio Raio, Ivana Randazzo, Anna Pia Ruoppo, Donald Phillip Verene).
http://www.francoangeli.it/ricerca/Scheda_libro.aspx?id=20250

4. Sonderausgaben/Themenausgaben von Zeitschriften

- Ng, Julia / Tobias, Rochelle (eds.): "Modern Language Notes", Volume 127, Number 3, April 2012 (German Issue): Walter Benjamin, Gershom Scholem, and the Marburg School. Mit Texten von G. Scholem und Aufsätzen von: J. Ng, W. Hamacher, P. Fenves, J.H. Smith, P.L. Schwebel, P. Fiorato, G. Raulet, M. de Launay, R. Tobias.
- Czardybon, B. / Augustyn, L. / Bochun, M. (Hg.): Postneokantyzm – ontologizm, in: „Estetyka i Krytyka“ 3/2012, nr 26.
- Wiedebach, Hartwig / Zank, Michael (Hg.): The Kant-Maimonides Constellation. [Sonderheft von:] The Journal of Jewish Thought and Philosophy 20 (2012), No. 2.

II. VERÖFFENTLICHUNGEN IN VORBEREITUNG

a) Primärliteratur (Editionen und Übersetzungen)

- Cohen, Hermann: Kantowska teoria doświadczenia (=Kants Theorie der Erfahrung). Übers. v. Andrzej J. Noras. Kęty: Wydawnictwo M. Derewecki.
- Platon néokantien, mit Texten von Rudolf Hermann Lotze, Hermann Cohen, Paul Natorp, Wilhelm Windelband, Emil Lask, Bruno Bauch und Richard Höningwald. Dewalque, Arnaud (trad.), Paris, Vrin.
- Lask, Emil (2012): Rechtsphilosophie (mit kritischer Einführung). Filosofia do Direito. Übersetzer: Resende Jr., José, Brasilien, (in Vorbereitung).

b) Sekundärliteratur

1. Monographien und Dissertationen

Dürmaier, Ana Thereza: Neukantianismus Heute (Neokantismo hoje) Brasilien.

Hagelstein, Maud: Origine et survivances. L'historique et le transcendantal en tension (Warburg, Cassirer, Panofsky), Olms, Hildesheim.

Maigné, Carole: Ernst Cassirer, Belin, Paris.

Van Vliet, Muriel: La forme selon E. Cassirer – De la morphologie au structuralisme, Rennes, Presses Universitaires de Rennes.

2. Tagungs- und Sammelbände

Krijnen, Christian / Launay, Marc de (Hg.): Der Begriff der Geschichte im Marburger und Südwestdeutschen Neukantianismus und seine Aktualität, Königshausen & Neumann, Würzburg.

Krijnen, Christian / Zeidler, Kurt Walter (Hg.): Wissenschaftsphilosophie im Neukantianismus, Königshausen & Neumann, Würzburg.

Wiedebach, Hartwig (Hg.): Die Denkfigur des Systems im Ausgang von Franz Rosenzweigs ‚Stern der Erlösung‘, Berlin u.a., Duncker und Humblot.

III. TAGUNGEN AB 2012

2010 - 2013: Tagungszyklus *Desiderata der Neukantianismus-Forschung*. Es handelt sich um einen ersten, auf 4 Tagungen ausgelegten Zyklus, dem sich in Zusammenarbeit mit weiteren Kollegen ein folgender anschließen könnte (Vorschläge an Christian Krijnen sind herzlich willkommen!). Folgende Tagungen finden ab 2012 statt:

- März 2012 (22.03.12 – 23.03.12, Paris), *Der Begriff der Geschichte im Marburger und südwestdeutschen Neukantianismus und seine Aktualität*. Veranstalter: M. de Launay und Ch. Krijnen.
- November / Dezember 2012 (Do. 30. November 2012 - Sa. 01. Dezember 2012), Wien, *Wissenschaftstheorie im Neukantianismus*. Veranstalter: K.-W. Zeidler und Ch. Krijnen, mit Vorträgen von Massimo Ferrari, Werner Flach, Elisabeth Nemeth, Michael Heidelberger Christian Krijnen, Tomasz Kubalica, Peter-Ulrich Merz-Benz, Stanley L. Paulson, Volker Peckhaus, Gregor Schiemann, Wolfdietrich Schmied-Kowarzik, Friedrich Stadler, Christian Thiel, Uwe Wolfradt, Kurt Walter Zeidler.
- Oktober 2013 (Donnerstag 10. und Freitag 11. Oktober 2013), Turin. *Thema: Kulturphilosophie. Probleme und Perspektiven des Neukantianismus / La filosofia della cultura. Problemi e prospettive del neokantismo*. Veranstalter: Massimo Ferrari, Pierfrancesco Fiorato, Christian Krijnen. Mit Vorträgen von Christian Bermes, Massimo Ferrari, Pierfrancesco Fiorato, Margret Heitmann, Helmut Holzhey, Ralf Konersmann, Christian Krijnen, Sebastian Luft, Detlev Pätzold, Birgit Recki, Ursula Renz.

Januar 2012 (10–11.01.2012), Ogólnopolska Konferencja Naukowa „Nowe Ontologie”: tradycja postneokantyzmu w Niemczech i Rosji. Kraków.

Februar 2012 (13-14.02.12), Tagung: Psychologie et psychologisme (mit Beiträgen zu Kants Rezeptionsgeschichte), Ort: Universität Lüttich, Veranstalter: M. Gyemant.

Juni 2012, Forschungsseminar 2012: Philosophie: die neukantianische Sicht, 18.-19. Juni 2012, João Pessoa, Paraíba, Brasilien. Neukantianismus und Philosophie der

- Gegenwart Forschungsgruppe (Nationaler Forschungsrat/CNPq, Brasilien).
Teilnehmer/ Mitglieder: Ana Thereza Dürmaier, José de Resende Jr., Dario Alves
Teixeira Filho, Newton de Oliveira Lima, Breno Soares, Leonardo Paulino, Luismar
Cardoso, Raniere Fonseca.
- September, 2012, Runder Tisch „S.I. Hessen in der Emigration“ mit der Beteiligung von O.
Ermischin, Ju. Melich, V. Belov, S. Nizhnikov, M. Galachtin, D. Samoilov (Moskau,
das Haus des Auslandsrussentum, 27).
- November 2012 (16.-17.11.12), Kolloquium: Cassirer et l'exil américain [1942-1945] : De la
« science de la forme » au structuralisme, quel tournant pour les « sciences de la
culture » ?, Ort: ENS rue d'Ulm, Paris, Veranstalter: S. Plaud (Phico/Execo) und M.
van Vliet (Univ. de Rennes 1 - CEPA).
- Januar 2013 (19.01.13), Buchdarstellung: M. van Vliet, La forme selon E. Cassirer .
- April 2013, Paul Natorp. W setną rocznicę wydania „Allgemeine Psychologie nach kritischer
Methode“ (1912). Katowice, 26.04.2012.
- Mai 2013, Transcendentalizm a normatywność. Słupsk, 30–31.05.2012.
- Mai 2013, International Scientific Conference – Economy/Culture/Values. On the Origins of
Social and Cultural Sciences. Gdańsk 15–17.05.2013
(<http://www.zie.pg.gda.pl/konferencja-rickert>).
- De la morphologie au structuralisme (Presses Universitaires de Rennes, in Vorbereitung), und
C. Maigné, Ernst Cassirer (Belin, in Vorbereitung), Séminaire du CEPA, Ort:
Universität Paris 1 – Sorbonne, Paris.
- Neukantianismus-Tagung in USA (SPAWN-Conference), Syracuse University, veranstaltet
von Fred Beiser und Sebastian Luft (vermutlich 2013).

2 ADDENDA

2.1 Addenda 2009

I. VERÖFFENTLICHUNGEN 2009

b) Sekundärliteratur

2. Aufsätze (sofern einzeln gemeldet)

Akindinova, Tatjana A.: Die Poesie und bildende Kunst: von H. Cohen bis M. Bachtin, in: Die Ästhetik und die Ethik in transienter Welt, St. Petersburg, 164-167.

Akindinova, Tatjana A.: H. Cohen als moderner Philosoph, in: Der Meister und Professional: Die Geschichte und die Gegenwart, 25-33.

Linevskaj, D. O.: F. A. Stepun und die Badener Schule des Neukantianismus, in: Die Ästhetik und die Ethik in transienter Welt, St. Petersburg, 158-163.

2.2 Addenda 2010

I. VERÖFFENTLICHUNGEN 2010

a) Primärliteratur (Editionen und Übersetzungen)

Cohen, Hermann 2010: Der Begriff der Religion im System der Philosophie (El concepto de la religión en el sistema de la filosofía) Übersetzer: Quiroz, José Andrés Ancona. Barcelona: Anthropos (Spain).

b) Sekundärliteratur

1. Monographien und Dissertationen

Dewalque, Arnaud: Être et jugement. La fondation de l'ontologie chez Heinrich Rickert, Olms, Hildesheim.

Dufour, Éric, Paul Natorp: De la Psychologie générale à la Systématique philosophique, Paris, Vrin.

Janaszczyk, Agata: Na granicy neokantyzmu. O filozofii Hansa Vaihinger (= An der Grenze des Neukantianismus. Über die Philosophie von Hans Vaihinger). Gdańsk: Wydawnictwo słowo/obraz terytoria.

Paes, Marcos de Souza: Freiheit und Natur: das Kausalitätsproblem in den 'Kritiken' von Kant und sein Einfluss auf die deutsche neukantianische Geographie (Liberdade e natureza: o problema da causalidade nas críticas de Kant e sua influência na geografia alemã neokantiana). Universidade do Estado do Rio de Janeiro (Brasilien).

Rodrigues Garcia, Rafael: Genealogie der Kulturkritik: eine Studie über Ernst Cassirers Philosophie der symbolischen Formen (Genealogia da crítica da cultura: um estudo sobre a Filosofia das formas simbólicas de Ernst Cassirer). Universidade de São Paulo (Brasilien).

2. Aufsätze (sofern einzeln gemeldet)

- Arrese Igor, Hector: Die Rezeption des jüdischen Monotheismus in der philosophischen Ethik des reinen Willens von Hermann Cohen (La recepción filosófica del monoteísmo judío en la Ética de la voluntad pura de Hermann Cohen) in *El Títere y el Enano* Vol. I *Revista de Teología Crítica* (Argentinien).
- Belov, Vladimir: A. Losev et le néo-kantisme de Marburg, in: *SLAVICA OCCITANIA*, Numéro 30, L'Oeuvre d'Alekseï Losev dans le contexte de la culture européenne. Édité par Maryse Dennes, Publié avec le soutien du Centre national du livre et de l'Université Michel de Montaigne Bordeaux 3, Toulouse. P. 263-271.
- Belov, Vladimir: B.V. Jakovenko über die Philosophie von H. Cohen als die Synthese der philosophischen Positionen von Kant und Hegel, in: *Die Wissenschaft der Philosophie: die Traditionen und Perspektiven der Entwicklung. Zum 240. Geburtstag von G. W.-F. Hegel*, Krasnodar, 66-71.
- Belov, Vladimir: Das Problem der Rationalität und Irrationalität im System der Philosophie von V. Sesemann, in: *X. Kantisches Lesen. Klassische Vernunft und Herausforderung der modernen Zivilisation: Materialien der internationalen Konferenz*, Kaliningrad, 7-24.
- Belov, Vladimir: Der russische Neukantianismus und die russische Religionsphilosophie: ein Versuch der komparativistischen Analyse, in: *Die russische Philosophie: Einheit und Mannigfaltigkeit*, Saratov, 77-91.
- Belov, Vladimir: Sokuler, Z.: Hermann Cohen und Dialogphilosophie (Rezension), in: *Kantische Sammlung [Kantovskiji sbornik]* 4(34), 104-110.
- Bonaldi, Claudio: Il concetto di "fenomeno originario". Cassirer, Goethe e la ricerca dell'origine, in *Annuario filosofico XXVI* (2010), 349-370.
- Dmitrieva, Nina A.: Mensch und Geschichte. Zur 'anthropologischen Wende' im russischen Neukantianismus, in: *Etica & Politica / Ethics & Politics*. Vol. XII, no. 2. P. 82-103.
- Dudyschkin, Vladimir A.: A. I. Vvedenskij und der russische Neukantianismus, in: *Das Informationsblatt der Tambover Universität*. Heft 7, Tambov, 127-131.
- Gladkov, I. V.: Die philosophische Ideen von Tschelpanov im Modus des Kantianismus, in: *Der Mensch, die Kultur, die Verwaltung*. Heft 8, Ekaterinburg, 64-80.
- González Porta, M.: Hermeneutik einer Philosophie der symbolischen Formen (Hermenéutica de una filosofía de las formas simbólicas) ,*Natal: Princípios*, v.17, n.27, jan./jun. 2010 (Brasilien).
- Kantor, V. K.: R. Kroner, N. Bubnov, G. Melis, S. Hessen, F. Stepun. Über Messias. Essay zur Kulturphilosophie (Rezension), in: *Fragen der Philosophie* 11, 181-185.
- Kornilova, M. N.: Der Beitrag des Neukantianismus zur Ausarbeitung der Methodologie der humanitären Wissenschaften, in: *Die Philosophie über das Wissen und die Erkenntnis: die aktuelle Problemen*, Uljanovsk, 261-267.
- Krichevskij, M. V.: Neukantianische Diskussionen in der Literaturwissenschaft, in: *Fragen der Philosophie* 7, 153-158.
- Kubalica, T.: Relative Richtigkeit der Abbildtheorie von Heinrich Rickert (Übersetzung von polnischen V. Prochorov und V. Belov), in: *Kantische Sammlung [Kantovskiji sbornik]* 2(32), 69-80.
- Melich, Ju. B.: F. A. Stepun – Kantianer und Mystiker, in: *Fragen der Philosophie* 7, 102-114.

- Pringe, Hernán: Methode und Subjektivität in Hermann Cohens Neukantianismus (Método y subjetividad en el neokantismo de Hermann Cohen) in ASSALONE, Eduardo u. MISSERI, Lucas (Compiladores): Die subjektivistische Wende in der Philosophie der Neuzeit: historische Perspektiven und aktuelle Debatten (El giro subjetivista de la Filosofía Moderna: perspectivas históricas y debates contemporâneos), Argentinien, Mar del Plata: Ediciones Cátedra de Filosofía Moderna.
- Rjabov, P. V.: Der russische Kantianismus und Neukantianismus des Anfangs des XX. Jahrhunderts im unveröffentlichten Memoiren von A. A. Borovoj, in: Kantische Sammlung [Kantovskiji sbornik] 4(34), 97-104.
- Sesemann, V. E.: Die theoretische Philosophie der Marburger Schule (mit Nachwort von V.I. Povilajtis), in: Kantische Sammlung [Kantovskiji sbornik] 4(34), 60-80.
- Stolovich, Leonid: A. Z. Schteinberg und seines Memoiren, in: Fragen der Philosophie 7, 114-124.
- Vila Pérez, Juan M.: Logik, Wahrheit und Sache. Eine phänomenologische Kritik am neukantianischen Begriff der Logik (Lógica, verdad y cosa. Una crítica fenomenológica al concepto neo-kantiano de la lógica) in ASSALONE, Eduardo u. MISSERI, Lucas (Compiladores): Die subjektivistische Wende in der Philosophie der Neuzeit: historische Perspektiven und aktuelle Debatten (El giro subjetivista de la Filosofía Moderna: perspectivas históricas y debates contemporâneos), Argentinien, Mar del Plata: Ediciones Cátedra de Filosofía Moderna.
- Wu, Roberto: Heidegger und der Neukantismus von Windelband und Rickert (Heidegger e o neokantismo de Windelband e Rickert) São João Del Rei: Revista Estudos Filosóficos nº 5 /2010 (Brasilien).

2.3 Addenda 2011

I. VERÖFFENTLICHUNGEN 2011

a) Primärliteratur (Editionen und Übersetzungen)

- Cassirer, Ernst: Logika nauk o kulturze. Pięć studiów (=Zur Logik der Kulturwissenschaften. Fünf Studien). Übers. v. Przemysław Parszutowicz. Kety: Wydawnictwo M. Derewecki.
- Köhnke, K.: Entstehung und Aufstieg des Neukantianismus. Die deutsche Universitätsphilosophie zwischen Idealismus und Positivismus (Surgimiento y auge del neokantismo. La filosofía universitaria alemana entre el idealismo y el positivismo) Übersetzer: José Andrés Ancona Quiroz. Fondo de Cultura Economica Verlag, Mexiko.
- Sesemann, V. E.: Die reale Einrichtung und das „reine“ (unverstellbare) Wissen (aus dem handschriftlichen Nachlass) (Die Redaktion und die Vorbereitung zur Publikation V.I. Povilajtis), in: Kantische Sammlung [Kantovskiji sbornik] 1(35), 88-98.
- Sesemann, V. E.: Die reale Einrichtung und das „reine“ (unverstellbare) Wissen (aus dem handschriftlichen Nachlass) (Die Redaktion und die Vorbereitung zur Publikation V.I. Povilajtis), in: Kantische Sammlung [Kantovskiji sbornik] 2(36), 83-90.

b) Sekundärliteratur

1. Monographien und Dissertationen

- Hanuszkiewicz, Wojciech: *Filozofia Hermanna Cohena w perspektywie sporu o jedność metody transcendentalnej (=Hermann Cohens Philosophie vor dem Hintergrund des Streites über die Einheit der transzendentalen Methode)*, Warszawa: Wydawnictwo IFiS PAN.
- Kubalica, Tomasz: *Wahrheit, Geltung und Wert: Die Wahrheitstheorie der Badischen Schule des Neukantianismus*. Würzburg.
- Noras, Andrzej J.: *Kant a novokantovstvo – bádenská a marburská škola*. Übers. v. E. Andreanský, V. Leško, P. Tholt. Košice: Filozofická fakulta UPJŠ.
- Semenov, Valeriji: *Dominierende Paradigmen des Transzendentalismus in der westeuropäischen Philosophie, Russische Staatliche Humanitäre Universität (Dissertation)*.
- Wogenstein, Sebastian: *Horizonte der Moderne. Tragödie und Judentum von Cohen bis Lévinas*. Heidelberg, Universitätsverlag Winter.

2. Aufsätze (sofern einzeln gemeldet)

- Belov, Vladimir: *Cohen über Descartes*, in: *Philosophische Erforschungen: Moskauer-S.-Petersburger Sammlung*. Ausgabe 2, Moskau, 303-311.
- Belov, Vladimir: *Für die Reinheit des Kantischen Erbes*, in: *Kantische Sammlung [Kantovskiji sbornik] 2(36)*, 7-11.
- Dalvani Fernandes, Sylvio: *Geographie bei Cassirer: Perspektiven zur Geographie der Religion (Geografia em Cassirer: Perspectivas para a geografia da religião. GeoTextos, Vol. 7, N. 2 (Brasilien))*.
- Favuzzi, Pellegrino: *L'ultimo Cassirer. Il problema della "svolta", la fondazione umanistica e l'orizzonte antropologico della filosofia della cultura [Der späte Cassirer. Das Problem der „Wende“, die humanistische Begründung und der anthropologische Horizont der Kulturphilosophie]*, in *Bollettino della Società filosofica italiana 203 (2011)*, 15-28.
- Orejudo Pedrosa, Juan Carlos: *Cassirer und der Humanismus: Die französische-kantischen Aufklärung in Frage (Cassirer y el Humanismo: La Ilustración franco-kantiana en cuestión)*. Eikasía. Revista de Filosofía, año VI, 36 (Oviedo, Spanien).
- Poma, Andrea: *Der kritische Philosophie von Hermann Cohen. Kapitel 6. Die Ethik (Übersetzung von italienisch O.A. Popova, Vorwort, Redaktion und Vergleich der Zitate in deutscher Sprache von V.N. Belov)*, in: *Kantische Sammlung [Kantovskiji sbornik] 1(35)*, 70-88.
- Poma, Andrea: *Der kritische Philosophie von Hermann Cohen. Kapitel 6. Die Ethik (Übersetzung von italienisch O.A. Popova, Vorwort, Redaktion und Vergleich der Zitate auf deutscher Sprache von V.N. Belov)*, in: *Kantische Sammlung [Kantovskiji sbornik] 2(36)*, 73-83.
- Povilajtis, V. I.: *Die Hauptbegriffe der Geschichtsphilosophie von F.A. Stegun*, in: *Kantische Sammlung [Kantovskiji sbornik] 1(35)*, 55-60.
- Rotolo, Catia: *Tra trascendentale e simbolico. Premesse al concetto di forma nella filosofia di Ernst Cassirer in Idee – semestrale di filosofia e scienze sociali ed economiche, Anno I/ Nuova serie Nn. 1/2, Gennaio/Dicembre 2011*.

3. Sonderausgaben/Themenausgaben von Zeitschriften

- Dekoninck, Ralph / Lories, Danielle (éds.): *L'Art en valeurs*, Paris, L'Harmattan.
- Feron, Olivier (coord.): *Figuras da Racionalidade. Neokantismo e Fenomenologia*, Lisboa, Centro de Filosofia da Universidade de Lisboa.
- Feron, Olivier (Hg.): *Figuren der Rationalität. Neukantianismus und Phänomenologie [Figuras da Racionalidade. Neokantismo e Fenomenologia]*. Lissabon: Centro de Filosofia Universidade de Lisboa Verlag (Portugal).
- González Porta, Mario: *Neukantianische Studien [Estudos Neokantianos]*. São Paulo: Loyola Verlag (Brasilien).
- Noras, Andrzej J. / Bęben, Dariusz (Hrsg.): *Filozofia Kanta i jej recepcja (=Kants Philosophie und ihre Rezeption)*. Katowice: Wydawnictwo UŚ.
- Noras, Andrzej J. / Kubalica, Tomasz (Hrsg.): *Neokantyzm badeński i marburski. Antologia tekstów (=Marburger und Südwestdeutschen Neukantianismus. Anthologie)*. Katowice: Wydawnictwo UŚ.
- Parszutowicz, Przemysław / Soin, Maciej (Hrsg.): *Idea transcendentalizmu. Od Kanta do Wittgensteina (=Idee des Transzendentalismus. Von Kant bis Wittgenstein)*. Warszawa: Wydawnictwo IFiS PAN.

III. TAGUNGEN

- Seminar 2011: *Logik, Methode und Subjekt in der Diskussion zwischen Heidegger und dem Neukantianismus (Lógica, método y sujeto en el debate entre heidegger y el neokantismo)*. Teilnehmer/Mitglieder - Kant-Forschungsgruppe (Grupo de estudios kantianos - GEK): Dr. Hernán Pringe, Dr. Bernardo Aimbinder, Marcos Thisted, Dra. Macarena Marey, Hugo Figueredo, Miguel Herzenbaun, Luciana Martínez, Jacinto Páez, Laura Pelegrín, Javier San Sebastián. Instituto de Filosofía de la Facultad de Filosofía y Letras de la Universidad de Buenos Aires, Argentinien.
- Juni/Dezember 2011 (Paris/Liège), *L'image pense. Image et langage chez Aby Warburg, Ernst Cassirer et Erwin Panofsky, coopération du Centre Allemand d'Histoire de l'Art (Paris), du groupe de contact F.R.S.-FNRS « Esthétique et philosophie de l'art » et du groupe de contact F.R.S.-FNRS « Historiographie et épistémologie de l'histoire de l'art » (Belgique)*.
- Dezember 2011 (16-17.12.11), *Lotze et son héritage. Journées d'étude internationales sur la philosophie de Lotze et son influence sur la philosophie du XIXe et du XXe siècle*, Université de Liège, Veranstaltung: F. Boccaccini.

3 FORSCHUNGSBERICHTE UND -ÜBERSICHTEN

3.1 HELMHOLTZ IN NEO-KANTIANISM

HELMHOLTZ IN NEO-KANTIANISM

von

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1. WORKS BY HERMANN VON HELMHOLTZ

- 1847: *Über die Erhaltung der Kraft*, Berlin: Reimer; reprinted with additional notes in: Helmholtz 1882, 12-75; Eng. trans. in: Helmholtz 1971, 3-55. This essay includes a proof of an equivalent formulation for the conservation of force – namely, the principle that all forces can be calculated as functions of distances between pairs of points. Once the direction has been specified, all forces are supposed to be central forces. By 1882, however, Helmholtz admitted that the centrality of force is not necessary: it can only be assumed as an empirical generalization and such assumption can be called into question, if one considers more recent electromagnetic theories. Moreover, in an addition appeared in the 1882 edition, Helmholtz declared that, in 1847, he adhered to a Kantian conception of causality he was not willing to defend any more. By that time, Helmholtz tended to consider Kant's principles of experience as regulative ones: the law of causality is now understood as the requirement that the phenomena be related to one another in a lawful way.
- 1855: *Über das Sehen des Menschen*, Vortrag gehalten zu Königsberg am 27. Februar 1855, in: Helmholtz 1903, Bd. 1, 85-118. This lecture was given by Helmholtz when he was appointed professor of Physiology at the University of Königsberg. On that occasion, Helmholtz appealed to Kant in order to bridge the gap between philosophy and the sciences at a time when most scientists had become sceptical about philosophy. In Helmholtz's opinion, scepticism was a reaction to the philosophies of nature of Hegel and Schelling and their attempts to predict empirical results by means of pure thinking. Helmholtz put Kant's theory of perception in connection with physiological developments such as Johannes Müller's theory of specific sense energies: Kant's indication of subjective factors of representation is confirmed by Müller's proof that sensuous qualities depend not so much on the perceived object as on our nerves. This claim was vividly discussed by the neo-Kantians. Though none of them accepted the physiological interpretation of Kant's philosophy, Helmholtz's intent to go back to Kant to promote a science-oriented philosophy was appreciated especially by Alois Riehl. And Helmholtz's use of Kant's philosophy to study the foundations of the sciences can be considered one of the first developments of the neo-Kantian movement itself. Helmholtz considered the inquiry on the conditions of knowledge preliminary to any assumption regarding nature. He, therefore, distanced himself both from an idealist conception of nature and from a materialist one.
- 1862: *Über das Verhältniss der Naturwissenschaften zur Gesamtheit der Wissenschaften*, Akademische Festrede gehalten zu Heidelberg beim Antritt des Prorektorats, in: Helmholtz 1903, Bd. 1, 157-186. Helmholtz classifies the sciences according to their methods. Natural science presupposes the conscious formation of general categories and laws. By contrast, human sciences, such as jurisprudence, philology, and history, are characterized by their lack of clearly formulable principles. Their generalizations result from a kind of unconscious reasoning Helmholtz calls *artistic induction* in contrast with the logical induction of natural science.
- 1867: *Handbuch der physiologischen Optik*, 3 Bde., Leipzig: Voss. In this work Helmholtz rejects nativism (including Müller's theory of vision) and develops an empiricist physiology of vision, along with an empiricist explanation of spatial perception based on local signs and unconscious inferences (see also Helmholtz 1868a, 331-365). So it might seem that he calls into question also the Kantian theory of perception he endorsed in 1855. Still there are points of agreement with Kant, in several aspects. Firstly, inferences from our sensations to external

causes presuppose the principle of causality as an a priori law in Kant's sense. Owing to the principle of causality, the qualities of sensations can be deemed signs of something else. Secondly, Helmholtz traces back to Kant a fundamental distinction between subjective factors of experience and objective ones. The issue of philosophy then is to show how subjective impressions can be developed so that our knowledge acquires objectivity. This formulation of the problem of knowledge was adopted by Alois Riehl; whereas Marburg neo-Kantians considered the problem thereby formulated an unsolvable one.

1868a: Die neuere Fortschritte in der Theorie des Sehens, *Preussische Jahrbücher* 21, 149-170; reprint in: Helmholtz 1903, Bd. 1, 265-366.

1868b: Über die Tatsachen, die der Geometrie zugrunde liegen, *Abhandlungen der Königl. Gesellschaft der Wissenschaften zu Göttingen* 15; reprinted in: Helmholtz 1883, 618-639; Helmholtz 1921, 38-55. This paper includes an attempt to deduce Riemann's metric (1854) from the free mobility of rigid bodies (i.e., the fact that most solid bodies we experience remain unvaried in shape and size during displacements) and the remaining conditions of empirical measurements. Accordingly, Helmholtz defines space as a three-fold extended manifold of constant curvature. Helmholtz's inquiry differs from Riemann's one, firstly, because Riemann's *hypotheses* underlying geometry are replaced with *facts* to be induced by experience. A related problem is that Helmholtz overlooks the distinction between the finite level and the infinitesimal one: Riemann's metric is formulated at the infinitesimal level and cannot be derived from the free mobility of rigid bodies. Secondly, Riemann is not committed to the supposition that space is a manifold of constant curvature. His conjecture is that the curvature of space may be variable at the infinitesimal level, provided that the total curvature for intervals of a certain extension approximately equals zero. For a critical analysis of Helmholtz's attempt see also Torretti 1978, 155-71. Nevertheless, in philosophical discussions on that subject in the second half of the nineteenth century, Riemann's inquiry was usually read in connection with Helmholtz's one and the attempt to show how the form of space can be derived from empirical conditions was called "Riemann-Helmholtz theory".

1870: Über den Ursprung und die Bedeutung der geometrischen Axiome, Vortrag gehalten im Docentenverein zu Heidelberg, in: Helmholtz 1903, Bd. 2, 1-31; reprinted in: Helmholtz 1921, 1-24. This lecture includes a presentation of Helmholtz's inquiry on the foundations of geometry for a wide audience and his objections to Kant. There is, in fact, an important development in Helmholtz's view: around 1869, the Italian mathematician Eugenio Beltrami, with whom Helmholtz corresponded, had drawn his attention to the fact that manifolds of constant curvature might admit both Euclidean and non-Euclidean geometry. Therefore, in 1870, Helmholtz first presented a series of mental experiments showing how the form of intuition of space might be varied under suitably different empirical circumstances. The description of such circumstances should contradict Kant's assumption of an unchangeable form of intuition underlying any phenomenal changes and make the claim that geometrical axioms are synthetic a priori judgements untenable. Axioms can be either synthetic a posteriori, as Helmholtz claims, or analytic. Either way, they cannot be necessary. This lecture was hugely discussed in neo-Kantianism. And since the first discussions by Cohen and Riehl, two different strategies were developed to defend the apriority of geometrical axioms: on Cohen's view, critical philosophy is not committed to the necessity of some propositions; its issue, rather, is to prove that a connection of conditions is necessarily required for knowledge. On the other hand, Riehl restricted apriority to some fundamental concepts and emphasized necessity and universality as intrinsic properties of geometrical knowledge.

1876: The Origin and the Meaning of Geometrical Axioms I, *Mind* 1, 301-321. The English translation of Helmholtz 1870 caused a debate with the Dutch Kantian Jan Pieter Nicolaas Land. During that debate, Helmholtz partially reconsidered the Kantian theory of space.

1878a: The Origin and Meaning of Geometrical Axioms II, *Mind* 3, 212-225. The second part of Helmholtz (1876) includes Helmholtz's reply to Land (1877). It was republished in German as the third Appendix to Helmholtz (1878b). Here Helmholtz provides a physical interpretation of geometrical notions (e.g., congruence) and calls the study of such notions *physical geometry*. He then reformulates his objection to Kant as follows: physical geometry may not necessarily agree with pure geometry regarding the equality of some parts of space. If there

should be any disagreement, constraints imposed by pure geometry ought to be abandoned for the objectivity of empirical measurements.

- 1878b: Die Tatsachen in der Wahrnehmung, Rede, gehalten zur Stiftungsfeier der Friedrich-Wilhelm-Universität zu Berlin, in: Helmholtz 1921, 109-152. We already mentioned that Helmholtz rejects the priority of pure geometry over physical geometry. Nevertheless, he admits that neither his empiricist philosophy of geometry nor the defence of physical geometry excludes that space can be considered a general form of intuition in Kant's sense, provided that a choice among hypotheses regarding the specific axiomatic structure of space cannot be made independently of empirical investigation. This way of reconsidering the Kantian theory of space might have influenced Cassirer and was defended by him in Cassirer (1940). At the same time, Helmholtz argues for a naturalization of Kant's form of outer intuition: the localization of the objects in space also entails a construction of the concept of space, which differs from Kant's pure intuition because it depends on experience and therefore admits different specifications. Such naturalization was criticized by Marburg neo-Kantians, including Cassirer. A more favourable account is found in Riehl (1879). Other interpreters who emphasized this aspect were above all Johannes von Kries and Moritz Schlick.
- 1882: *Wissenschaftliche Abhandlungen*, Bd. 1, Leipzig: Barth.
- 1883: *Wissenschaftliche Abhandlungen*, Bd. 2, Leipzig: Barth.
- 1887: Zählen und Messen, erkenntnistheoretisch betrachtet, in: *Philosophische Aufsätze, Eduard Zeller zu seinem fünfzigjährigen Doctorjubiläum gewidmet*, Leipzig: Fues', 17-52; reprinted in: Helmholtz 1921, 70-97. This essay includes Helmholtz's inquiry on the foundations of arithmetic and his theory of measurement. It was first reviewed by Cohen in 1888 and received attention in those works by the neo-Kantians that were devoted to the philosophy of exact sciences. The neo-Kantians focused, in particular, on the psychological origin of the number series proposed by Helmholtz and presented by him as a natural basis for the use of number symbols. So the naturalized version of Kant's form of outer intuition was extended to that of inner intuition. Helmholtz identified the latter with the time sequence and used his interpretation of Kant to argue for an ordinal conception of number, on the one hand, and for a nominalist account of the theory of cardinal numbers, on the other. On such view, cardinal numbers should be treated as arbitrarily chosen signs. This claim, in particular, made Helmholtz's philosophy of arithmetic problematic, not only for the neo-Kantians, but also for Husserl and Frege.
- 1894: Heinrich Hertz. Vorwort zu dessen Prinzipien der Mechanik, Leipzig: Barth; reprinted in Helmholtz 1903, Bd. 2, 363-380. *Prinzipien der Mechanik* was Heinrich Hertz's main contributions to theoretical physics and appeared posthumous in 1894. Despite the fact that his approach to mechanics differs considerably from Helmholtz's approach, Hertz had been one of Helmholtz's favourite students in Berlin and Helmholtz supported his career until Hertz's death at the age of 37. Helmholtz himself died in the same year and one of his last writings was the preface to Hertz's book.
- 1903 [1884]: *Vorträge und Reden*, 2 Bde., 5. Aufl., Braunschweig: Vieweg.
- 1921: *Schriften zur Erkenntnistheorie*, herausgegeben und erläutert von Paul Hertz und Moritz Schlick, Berlin: Springer (*Epistemological Writings: The Paul Hertz/Moritz Schlick Centenary Edition of 1921*, trans. Malcom F. Lowe, Robert S. Cohen & Yehuda Elkana (eds.), Dordrecht: Reidel, 1977). The centenary edition of Helmholtz's epistemological writings includes a selection of papers that were representative of Helmholtz's inquiry on the foundations of geometry and its development from 1868 to 1887. References to the related subjects and helpful comments were provided by the German theoretical physicist and mathematician Paul Hertz and by Moritz Schlick, who was about to become one of the leading figures of the Vienna Circle. Schlick's reading of Helmholtz was opposed to that proposed by Marburg neo-Kantians, especially Cassirer: what Schlick called into question was not so much the naturalization of the forms of intuition, rather the possibility of interpreting Helmholtz's conception of space as a generalization of Kant's conception. Other comments show his more sympathetic attitude toward Riehl. And Schlick's own conception of space might have been influenced by Riehl in some aspects (see Heidelberg 2006).

- 1971: *Selected Writings*, edited with an introduction by Russell Kahl, Middletown: Wesleyan University Press.
- 1990: *Letters of Hermann von Helmholtz to his Wife 1847-1859*, edited by Richard L. Kremer, Stuttgart: Steiner. Helmholtz's private correspondence includes important information regarding his studies, interests, and researches. Several quotes from Helmholtz's letters to his wife and to his parents were first made available in Königsberger (1902-1903) and were used by Riehl in support of his reconstruction of Helmholtz's relationship with Kant.
- 1993: *Letters of Hermann von Helmholtz to his Parents: The Medical Education of a German Scientist 1837-1846*, edited by David Cahan, Stuttgart: Steiner.

2. WORKS BY THE NEO-KANTIANS

- Bauch, Bruno 1907: Erfahrung und Geometrie in ihrem erkenntnistheoretischen Verhältnis, *Kant Studien* 12, 213-235. Bauch uses Poincaré's objections to Helmholtz's geometrical empiricism to better understand the relationship between geometry and experience. On the other hand, Bauch defends not so much Poincaré's geometrical conventionalism as a view that can be traced back to Riehl: while nineteenth-century inquiries on the foundations of geometry have proved the formal-logical possibility of a plurality of geometric systems, there is in fact only one geometry (i.e., Euclid's geometry) that can be related to human experience, and there can only be one geometry because it provides us with conditions of experience itself.
- 1911: *Studien zur Philosophie der exakten Wissenschaften*, Heidelberg: Winter. Bauch's studies in the philosophy of exact sciences include an extended version of Bauch (1907). Other sections of the book are devoted to Helmholtz's theory of signs and to his relationship with Kant. Bauch interprets Helmholtz's conception of causality as a Kantian one, especially if one considers Helmholtz's formulation of the principle of causality as the condition for ordering the phenomena in a lawful way.
- 1914: Über den Begriff des Naturgesetzes, *Kant Studien* 19, 303-337. Bauch refers to Helmholtz's insight into the conceptual character of natural laws in support of the Kantian view that laws are prescribed to nature by the categories of the understanding.
- Cassirer, Ernst 1907: Kant und die moderne Mathematik, *Kant Studien* 12, 1-49. Cassirer adopts an ordinal conception of number, though not so much in the version of Helmholtz as in that of Dedekind. Cassirer's critical remark against Helmholtz is made explicit in Cassirer (1910). Note, however, that, already in 1907, Cassirer rejects the identification of Kant's form of inner intuition with the time sequence and interprets it, rather, in Hamilton's sense as the general form of a progression whatsoever.
- 1910: *Substanzbegriff und Funktionsbegriff: Untersuchungen über die Grundfragen der Erkenntniskritik*, Berlin: B. Cassirer; Hamburger Ausgabe, Bd. 6. Important sections of Cassirer's work are devoted to Helmholtz's nominalist account of the cardinal theory of numbers and to his theory of signs. Cassirer substitutes "symbols" for "signs" to clearly distinguish between sense data associated with numerals and their intended meaning. His objection to Helmholtz is that such meaning presupposes not so much a psychological explanation as a logical development of the theory of numbers, and therefore an ordinal conception of numbers in Dedekind's sense (see Dedekind 1888). Cassirer's related objection to Helmholtz's theory of signs in the philosophy of perception regards the empiricist formulation of the problem of knowledge: the problem of motivating the belief in the objectivity of the knowledge that has been first acquired by subjective data is an unsolvable one, because the objectivity of knowledge already presupposes general, logical conditions of experience.
- 1918: Hermann Cohen und the Erneuerung der Kantischen Philosophie, *Kant Studien* 17, 252–273 (Eng. trans. Lydia Patton, Hermann Cohen and the Renewal of Kantian Philosophy, *Angelaki* 10.1 (2005), 95–108). Cassirer contrasts Cohen's theory of apriority with the physiological interpretation of the a priori proposed by Helmholtz in 1855.
- 1920-1921: *Die philosophischen Probleme der Relativitätstheorie*, in: *Vorlesungen und Vorträge zu philosophischen Problemen der Wissenschaften 1907-1945*, hrsg. v. Jörg Fingerhut, Gerald Hartung u. Rüdiger Kramme, Hamburg: Meiner, 2010, 29-116. Cassirer's

lectures on the philosophical questions regarding Einstein's general relativity include several remarks on Helmholtz's theory of measurement. Despite Helmholtz's commitment to classical mechanics (see especially Helmholtz 1847), Cassirer interprets Helmholtz as one of the forerunners of a functionalist conception of physical objects that had been developed in late nineteenth-century energetics.

- 1921: *Zur Einstein'schen Relativitätstheorie: Erkenntnistheoretische Betrachtungen*, Berlin: Bruno Cassirer; Hamburger Ausgabe, Bd. 10. Cassirer emphasizes the importance of the philosophical background of Einstein's general relativity for his reflexion on the conditions of measurement. In particular, Cassirer analyzes Helmholtz's notion of rigid body and the related debate on the status of geometrical axioms. Despite the compelling objections to Helmholtz's geometrical empiricism that had been developed by Poincaré, it was in the context of that debate that the priority of Euclid's geometry was first called into question, so that a more general system of hypotheses could be taken into consideration. And Einstein himself was involved in that debate (see Einstein 1921).
- 1923: *Substance and Function and Einstein's Theory of Relativity*, authorized translation by William C. and Marie C. Swabey, Chicago: Open Court.
- 1927a: *Erkenntnistheorie nebst den Grenzfragen der Logik und Denkpsychologie*, *Jahrbücher der Philosophie* 3, 31-92; Hamburger Ausgabe, Bd. 17, 13-81. A series of Cassirer's writings dated 1927-1929 give evidence of his interest in Helmholtz's conception of sign during the development of the third part of the philosophy of symbolic forms. At the same time, Cassirer emphasizes the role of the mathematical concept of function for the coordination between symbols and phenomena. He distances himself from Helmholtz because Cassirer sharply distinguishes such coordination, which is an ideal one, from actually given, psychic processes (see also Cassirer 1927b, 297-301).
- 1927b: *Das Symbolproblem und seine Stellung im System der Philosophie*, *Zeitschrift für Ästhetik und allgemeine Kunstwissenschaft* 21, 295-322; Hamburger Ausgabe, Bd. 17, 253-282.
- 1929a: Hermann von Helmholtz, in: *Encyclopedia Britannica: A New Survey of Universal Knowledge*; Hamburger Ausgabe, Bd. 17, 308-210. This entry includes Cassirer's account of the physiological interpretation of the a priori by Helmholtz (1855) and Lange (1866).
- 1929b: *Formen und Formwandlungen des philosophischen Wahrheitsbegriffs*, in: Hamburgische Universität. *Reden, gehalten bei der Feier des Rektoratswechsels am 7. November 1929*, 17-36; Hamburger Ausgabe, Bd. 17, 342-356. In this talk, Cassirer defends his functionalist conception of truth. The talk includes Cassirer's critical remarks on Helmholtz's philosophy of arithmetic (see also Cassirer 1910).
- 1929c: *Philosophie der symbolischen Formen*, 3. Teil: *Phänomenologie der Erkenntnis*, Berlin: B. Cassirer; Hamburger Ausgabe, Bd. 13. The third volume of *Philosophie der symbolischen Formen* includes a detailed account of Helmholtz's theory of signs, along with Cassirer's critical remark: while Helmholtz's theory of signs enables him to emphasize the role of the understanding in the interpretation of sense data, he is unclear about their symbolic function (i.e., that which provides us with their meaning). This is because Helmholtz reduces the connections signs stand for to causal connections: this particular way of interpreting sense data is influenced by classical mechanics and certainly is not the only one possible in physics as well as in other fields of knowledge.
- 1936-1937: *Ziele und Wege der Wirklichkeitserkenntnis*, in: *Nachgelassene Manuskripte und Texte*, hrsg. v. K.C. Köhnke u. J.M. Krois, Bd. 2, Hamburg: Meiner, 1999. This manuscript was part of Cassirer's project to deepen some of the subjects treated in the fourth volume of the *Erkenntnisproblem* by writing another book on "the goals and ways of knowing reality". Since Cassirer had emigrated during Nazism (first to England and then to Sweden) and did not succeed to find an editor at that time, both manuscripts were left in Sweden when he moved to the United States. They first appeared posthumous, *Erkenntnisproblem* in 1950 (in English translation) and *Ziele und Wege* in 1999. A section of the latter is devoted to Helmholtz's theory of signs and his controversy with Hering.
- 1940: *Das Erkenntnisproblem in der Philosophie und Wissenschaft der neueren Zeit*, 4. Bd.: *Von Hegels Tod bis zur Gegenwart: (1832-1932)*, Stuttgart: Kohlhammer, 1957; Hamburger

Ausgabe, Bd. 5. Cassirer interprets Helmholtz's conception of space as a generalization of Kant's form of outer intuition. It follows from Cohen's interpretation of the Kantian philosophy of space Cassirer adheres to that the form of outer intuition alone does not suffice to determine the geometrical properties of space. What is made clear by Helmholtz's analysis of the relationship between space and geometry is that, once general properties of space (e.g., continuity, homogeneity, etc.) have been formulated, there might still be a choice among hypotheses regarding its specific axiomatic structure.

— 1944: The Concept of Group and the Theory of Perception, *Philosophy and Phenomenological Research* 5.1, 1-35. Here and in Cassirer (1945), Cassirer refers to Helmholtz's theory of perception in support of the view that there are possibly progressive generalizations of the form of space. This way of proceeding at least implicitly entails a group-theoretical reasoning. There is in fact no evidence that Helmholtz himself was committed to the group-theoretical classification of geometries that was first developed by Klein (1872). Nevertheless, implicitly group-theoretical considerations in Helmholtz (1870) had been pointed out by Klein (1898).

— 1945: *The Concept of Group*, in: *Vorlesungen und Vorträge zu philosophischen Problemen der Wissenschaften 1907-1945*, 181-201.

— 2011: *Nachgelassene Manuskripte und Texte*, Bd. 4: *Symbolische Prägnanz, Ausdrucksphänomen und "Wiener Kreis"*, hrsg. von C. Möckel, Hamburg: Meiner. Some of the texts by Cassirer made available in this edition give further evidence of his interest in Helmholtz's conception of sign during the development of Cassirer's philosophy of symbolic forms.

Cohen, Hermann 1883: *Das Princip der Infinitesimal-Methode und seine Geschichte: Ein Kapitel zur Grundlegung der Erkenntniskritik*, Berlin: Dümmler; Neudruck in: *Werke*, herausgegeben vom Hermann-Cohen-Archiv unter der Leitung von Helmut Holzhey, Hildesheim: Olms, Bd. 5, 1984. Cohen maintains that Helmholtz's inquiry on the foundations of geometry makes it clear that there is a connection between intuition and understanding. On the other hand, Cohen points out that such connection cannot be used as an argument against Kant. The inseparability of both kinds of activities follows, in fact, from the structure of Kant's *Critique of Pure Reason*. Helmholtz's objections to Kant seem to depend on the fact that Kant's Transcendental Aesthetic is considered independently of the Analytic of Principles.

— 1885: *Kants Theorie der Erfahrung*, 2. Aufl., Berlin: Dümmler, 1885; Neudruck der 3. Aufl. von 1918 in: *Werke*, Bd. 1.1, 1987. In the second edition of *Kants Theorie der Erfahrung* Cohen defends the apriority of geometrical axioms against the so-called „Riemann-Helmholtz's theory“. Cohen interprets „axioms of intuition“ in the sense of Kant's Analytic of Principles, as the conditions of experience that make geometry applicable to the empirical manifold. But Cohen is not committed to the assumption of a geometric structure of space independently of empirical science. Therefore he does not call into question mathematical freedom in the development of non-Euclidean geometry. In this connection, the formulation of geometrical axioms or definitions is not an issue of transcendental philosophy, which is concerned not so much with pure mathematics per se as with the relationship between pure and applied mathematics.

— 1888: Jubiläums-Betrachtungen. Rezension von: Philosophische Aufsätze. Eduard Zeller zu seinem fünfzigjährigen Doctorjubiläum gewidmet (1887), *Philosophische Monatshefte* 24, 257-291; 2. Aufl. in: *Schriften zur Philosophie und Zeitgeschichte*, hrsg. von Ernst Cassirer u. Albert Görland, Berlin: Akademie-Verlag, 1928, Bd. 1. Cohen's „Jubiläums-Betrachtungen“ begin with a review of Helmholtz (1887). Cohen appreciates the structure of Helmholtz's inquiry – namely, the use of the laws of arithmetic analyzed in the first part of the paper to develop the theory of measurement presented in the second. Nevertheless, Cohen makes several critical remarks. The first regards Helmholtz's naturalization of the forms of intuition, which for Cohen makes them unable to provide foundations of mathematics. Helmholtz seems to presuppose the mathematical meaning of the concept of number from the outset: the psychological explanation of its origin would entail a *petitio principii*. Secondly, Cohen points out Helmholtz's confusion between numbers and numerals. This is another consequence of the said unclearness about the mathematical meaning of the concepts under consideration.

- 1896: Einleitung mit kritischem Nachtrag zur „Geschichte des Materialismus“ von F.A. Lange, 5. Aufl. von 1896; Neudruck der 3. Aufl. von 1914 in: *Werke*, Bd. 5, 1984. Cohen refers to Helmholtz in defence of the analytic method in geometry against the preference for synthetic method Kant inherited from Newton. On Cohen’s view, the importance of analytic method in nineteenth-century geometry speaks against Kant’s assumption of pure intuition as an autonomous source of mathematical knowledge.
- 1902: *Logik der reinen Erkenntnis*, Berlin: B. Cassirer; Neudruck der 2. Aufl. von 1914, in: *Werke*, Bd. 6, 1977. Cohen’s logic of pure knowledge is the first part of his system of philosophy and includes Cohen’s analysis of the relationship between logic and the exact sciences. In this connection, Cohen resumes his epistemological studies, including his discussions on the concept of number and on the origin of geometrical axioms.
- Cohn, Jonas 1908: *Voraussetzungen und Ziele des Erkennens: Untersuchungen über die Grundfragen der Logik*, Leipzig: Engelmann. Cohn’s theory of knowledge rests upon a dualistic principle called *utraquismus*, according to which there are two fundamental elements of knowledge – namely, a logical, formal element and a nonlogical, material one. He applies this principle to a number of issues in the philosophy of mathematics of his time, including the debates on the status of natural numbers and the foundations of geometry Helmholtz was involved with.
- Hönigswald, Richard 1908: Über den Unterschied und die Beziehungen der logischen und der erkenntnistheoretischen Elemente in dem kritischen Problem der Geometrie, in: *Bericht über den III. Internationalen Kongress für Philosophie, 1. bis 5. September 1908*, hrsg. v. Theodor Elsenhans, Heidelberg: Winter, 1909, 887-893. In this talk, Hönigswald maintains that, though all geometries that are logically possible are independent of experience, there is only one geometry that makes experience first possible – namely, Euclid’s geometry. To support this view, Hönigswald refers to Riehl’s conception of critical philosophy as theory of experience – namely, in this case, theory of the geometrical presuppositions of experience. A similar argument had been developed also by Bauch in 1907. And it is reported in the proceedings of the Congress that Bauch himself took part to the discussion that followed the talk to express his agreement with Hönigswald.
- 1912: *Zum Streit über die Grundlagen der Mathematik*, Heidelberg: Winter. Hönigswald defends the apriority of mathematics, including geometry, and distinguishes the concepts of space and time from space-time measurements in physics. His book includes one of the first philosophical discussions of the principle of relativity (see also Natorp 1910, 392-404).
- Natorp, Paul 1901: Zu den logischen Grundlagen der neueren Mathematik, *Archiv für systematische Philosophie* 7, 177-209, 372-384. The goal of this article is to prove the singularity of three-dimensional Euclidean space by deducing its defining properties a priori. The a priori argument for assuming three-dimensionality (whose most detailed version is found in Natorp 1910, 303-09), in particular, should directly contradict Helmholtz’s attempt to explain the same property empirically.
- 1910: *Die logischen Grundlagen der exakten Wissenschaften*, Leipzig: Teubner.
- Nelson, Leonard 1905-1906: Bemerkungen über die nicht-euklidische Geometrie und den Ursprung der mathematischen Gewißheit, *Abhandlungen der Friesschen Schule*, neue Folge 1.2-3, 373-430; reprinted in: *Gesammelte Schriften*, 3. Bd.: *Die kritische Methode in ihrer Bedeutung für die Wissenschaft*, hrsg. v. Paul Bernays, Willi Eichler, Arnold Gysin, Gustav Heckmann, Grete Henry-Hermann, Fritz von Hippel, Stephan Körner, Werner Kroebe, Gerhard Weisser, Hamburg: Meiner, 3-52. In this paper, as well as in Nelson (1906) and (1914), the founder of the neo-Friesian School, Leonard Nelson, defends the understanding of geometrical axioms as synthetic a priori judgement and maintains that mathematical knowledge is grounded in pure intuition, though in a way that makes this compatible with the use of axiomatic method: only the fundamental elements are univocally and immediately determined; the formulation of the first premises is not. This is because the foundations of mathematics lie outside the domain of language. And since they provide us with certain knowledge, they cannot be derived from experience either. In order to reply to Helmholtz’s objections to Kant, Nelson points out Helmholtz’s false inference from the nonlogical origin of geometrical axioms to their empirical origin: Helmholtz overlooks that the notion of pure

- intuition was meant by Kant precisely to indicate a source of mathematical knowledge that could be neither logical nor empirical.
- 1906: Kant und die nicht-Euklidische Geometrie, *Das Weltall* 6.10-12, 147-155, 174-182, 187-193; reprinted in: *Gesammelte Schriften*, Bd. 3, 53-94.
- 1914: Des fondements de la géométrie, Vortrag, gehalten in Paris am 8. April 1914 bei der Gründung der Société internationale de philosophie mathématique, in: *Die Reformation der Philosophie durch die Kritik der Vernunft*, Leipzig: Der Neue Geist-Verlag, 1918, 87-118; reprinted in: *Gesammelte Schriften*, Bd. 3, 129-156.
- Rickert, Heinrich 1929 [1896]: *Die Grenzen der naturwissenschaftlichen Begriffsbildung: Eine logische Einleitung in die historischen Wissenschaften*, 5. Aufl. Tübingen: Mohr; Neudruck mit einer Einleitung herausgegeben von Rainer A. Bast, Hildesheim: Olms, 2007. Rickert mentions Heinrich Hertz's *Prinzipien der Mechanik* as an example of natural-scientific reduction of the phenomena to lawful connections and refers to Helmholtz's preface to Hertz's book in support of the view that concrete aspects of natural phenomena cannot be accounted for in terms of general laws. Note, however, that Helmholtz's remark does not entail a lack of explanatory power of natural science per se. He only points out the limits of Hertz's attempt to generalize mechanics to all known natural phenomena by replacing action at distance theories with a field theory: such a generalization might be achievable in principle; but its application to entire branches of physics could not be accomplished without great effort.
- Riehl, Alois 1872a: Zur Aprioritätslehre, Rezension von: H. Cohen, Kants Theorie der Erfahrung (1871), *Philosophische Monatshefte* 8, 212-215. Riehl points out the relevance of Cohen's theory of apriority for the contemporary debate on the foundations of geometry, though Cohen himself did not explicitly discuss Helmholtz's geometrical empiricism until the second edition of his work.
- 1872b: *Über Begriff und Form der Philosophie*, Berlin: Duncker. By 1872, Riehl had distanced himself from Herbart's realism he first adhered to and adopted the thing-in-itself realism that followed from his interpretation of Kant. Riehl was also influenced by Helmholtz's conception of sensations as signs of external objects. Therefore Riehl rejected Herbart's project of a mathematical psychology and defended Helmholtz's empiricist approach.
- 1876: *Der philosophische Kriticismus und seine Bedeutung für die positive Wissenschaft*, 1. Bd.: *Geschichte und Methode des philosophischen Kriticismus*, Leipzig: Engelmann. Riehl's major work on critical philosophy shows Helmholtz's influence in several aspects. First of all, he adopts Helmholtz's distinction between subjective factors of experience and objective ones. The goal of the theory of knowledge then is to motivate our belief in the objectivity of knowledge, despite its subjective factors. Secondly, especially in 1879, Riehl's attempt is to show that the Kantian theory of space is compatible with Helmholtz's analysis of spatial perceptions. Therefore Riehl interprets Kant's distinction between form and matter of the phenomena as follows: only the general form of space is a priori; whereas the localization of particular objects in space also requires sensations.
- 1879: *Der philosophische Kriticismus*, 2. Bd.: *Die sinnlichen und logischen Grundlagen der Erkenntnis*. The second volume of Riehl's work includes a detailed analysis of Helmholtz's physiology of vision. And Riehl admits the empirical origin of properties of space such as three-dimensionality. Therefore he rejects Kant's assumption of pure intuition as the source of mathematical knowledge. Nevertheless, he argues for the assumption of intuitive foundations determining the Euclidean character of geometric space. On his view, the logical possibility of developing non-Euclidean geometry already presupposes the concept of a three-dimensional Euclidean space. For the same reason, Euclid's hypothesis should be preferred also in the choice of hypotheses regarding physical space. Note that Riehl was one of the first to distinguish between an intuitive, a geometric, and a physical meaning of space and, correspondingly, of the external world (see also Riehl 1887, chap. 4).
- 1887: *Der philosophische Kriticismus*, 3. Bd.: *Zur Wissenschaftstheorie und Metaphysik*.
- 1904a: Helmholtz in seinem Verhältnis zu Kant, *Kant Studien* 9, 260-285. This essay includes a reconstruction of Helmholtz's relationship with Kant and its development, along with a synthesis of Riehl's interpretation of the Kantian theory of space. Here Riehl's critical remark

against Helmholtz is made more explicit than in 1879. Riehl's point is that Helmholtz's association between Kant's philosophy and nativism in 1855 was misguided and led him to a misconception of the notion of "a priori", which is confused by Helmholtz with that of "transcendental" (e.g., in Helmholtz's use of the non-Kantian expression "transcendental intuition"). A priori knowledge (e.g., geometry) is the object of transcendental knowledge, whose goal for Riehl is to show that some knowledge is objective, despite its being a priori.

- 1904b: Anfänge des Kritizismus. – Methodologisches aus Kant, *Kant Studien* 9, 492-517. Despite the said critical remark, Riehl's appreciation for Helmholtz's contribution to the theory of knowledge is expressed by him in this paper, which is the revised version of the introduction to the second edition of Riehl's *Kritizismus*, as well as in Riehl (1921, 1922).
- 1921: Helmholtz als Erkenntnistheoretiker, *Die Naturwissenschaften* 35: *Dem Andenken an Helmholtz zur Jahrhundertfeier seines Geburtstages*, 702-708.
- 1922: Hermann von Helmholtz, in: *Führende Denker und Forscher*, Leipzig: Quelle & Meyer, 223-240.
- 1924: *Der philosophische Kritizismus*, Bd. 1, 3. Aufl., Leipzig: Kröner.
- 1925: *Der philosophische Kritizismus*, Bd. 2, 2. Aufl., Leipzig: Kröner. The second edition of this volume includes Riehl's additional comments on the relationship between space and geometry after Einstein's general relativity. Riehl uses his distinction between intuitive and physical space to defend his view that the Newtonian conception of space reflects the characteristics of the form of our spatial intuition.
- 1926: *Der philosophische Kritizismus*, Bd. 3, 2. Aufl., Leipzig: Kröner.

3. SECONDARY AND OTHER RELEVANT LITERATURE

- Biagioli, Francesca (forthcoming): Hermann Cohen and Alois Riehl on Geometrical Empiricism, forthcoming in *HOPOS: The Journal of the International Society for the History of Philosophy of Science*.
- Boi, Luciano 1995: *Le problème mathématique de l'espace: Une quête de l'intelligible*, Berlin : Springer. The author analyzes the development of the mathematical concept of space in the nineteenth century and discusses the related philosophical problems. Helmholtz's relationship with Kant and the neo-Kantian is analyzed in chap. 7.5.
- Cahan, David (ed.) 1993: *Hermann von Helmholtz and the Foundations of Nineteenth-Century Science*, Berkeley: University of California Press.
- Coffa, Alberto J.:1991: *The Semantic Tradition from Kant to Carnap: To the Vienna Station*, Cambridge: Cambridge University Press. Chap. 3 is devoted to the debate on Helmholtz's inquiry on the foundations of geometry and its discussions by Cohen and Riehl.
- Darrigol, Olivier 1994: Helmholtz's Electrodynamics and the Comprehensibility of Nature, in: Krüger 1994a, 216-244. The author studies the connections between Helmholtz's reflection on the comprehensibility of nature and his contributions to physics.
- 2003: Number and Measure: Hermann von Helmholtz at the Crossroads of Mathematics, Physics, and Psychology, *Studies in History and Philosophy of Science* 34, 515-573. The article offers a detailed analysis of Helmholtz's theory of measurement.
- Dedekind, Richard 1888: *Was sind und was sollen die Zahlen?*, Braunschweig: Vieweg.
- DiSalle, Robert 1993: Helmholtz's Empiricist Philosophy of Mathematics: Between Laws of Perception and Laws of Nature, in: Cahan 1993, 498-521.
- 2006: *Kant, Helmholtz, and the Meaning of Empiricism*, in: Friedman & Nordmann 2006, 123-139.
- Dosch, Hans Günter 1997: The Concept of Sign and Symbol in the Work of Hermann Helmholtz and Heinrich Hertz, in: N. Janz (ed.), Ernst Cassirer 1945-1995: Science et culture, Actes du colloque des 2-3 juin 1995 à l'Université de Lausanne, *Étude des Lettres* 1.2, 47-61.
- Einstein, Albert 1921: *Geometrie und Erfahrung, erweiterte Fassung des Festvortrages gehalten an der Preussischen Akademie der Wissenschaften zu Berlin am 27. Januar 1921*, Berlin: Springer.
- Erdmann, Benno 1877: *Die Axiome der Geometrie: Eine philosophische Untersuchung der Riemann-Helmholtz'schen Raumtheorie*, Leipzig: Voss. This book includes one of the first

- philosophical discussions of the so-called „Riemann-Helmholtz’s theory of space“. It was praised by Helmholtz himself as a good account of the nineteenth-century inquiries on the foundations of geometry in philosophical terms and played an important role in the philosophical reception of Helmholtz.
- Ferrari, Massimo 1994: Cassirer, Schlick und die Relativitätstheorie. Ein Beitrag zur Analyse des Verhältnisses von Neukantianismus und Neupositivismus, in: E.W. Orth & H. Holzhey (eds.), *Neukantianismus, Perspektiven und Probleme*, Würzburg: Königshausen & Neumann, 418-441 (originally published as: Cassirer, Schlick e l’interpretazione “kantiana” della teoria della relatività, *Rivista di filosofia* 82 (1991), 243-278).
- 1997: *Introduzione a Il neocriticismo*, Roma: Laterza.
- 2003: *Categorie e a priori*, Bologna: Il Mulino. The author interprets Helmholtz’s psychological understanding of the a priori as one of the sources of the dynamical conception of the a priori developed by Marburg neo-Kantians.
- 2009: Le forme della conoscenza scientifica: Cohen e Helmholtz, in: *Unità della ragione e modi dell’esperienza: Hermann Cohen e il neokantismo. Atti del Convegno internazionale di studi, Salerno 21-23 maggio*, a cura di G.P. Cammarota, Soveria Mannelli: Rubettino, 77-96. The author analyzes Cohen’s review of Helmholtz 1887 (see Cohen 1888) and connects it to later discussions of Helmholtz’s philosophy of arithmetic by Husserl, Frege, and Cassirer.
- Friedman, Michael 1997: Helmholtz’s *Zeichentheorie* and Schlick’s *Allgemeine Erkenntnislehre*: Early Logical Empiricism and its Nineteenth-Century Background, *Philosophical Topics* 25, 19-50. The author contrasts his reading of Helmholtz’s theory of signs with that of Schlick and interprets Helmholtz’s conception of space as follows: the localization of the objects in space provides us with a construction of the concept of space. This can be interpreted as a generalization of Kant’s conception (see also Friedman 1999, 45; 2000, 199-206; 2001, 29-30; Ryckman 2005, chap. 3; DiSalle, 2006, 138). The problem with Schlick’s reading lies, in particular, in his separation between sensibility and understanding, which, on the contrary, for Helmholtz are strictly related to each other (see also Pulte 2006, 197-200).
- 1999: *Reconsidering Logical Positivism*, Cambridge: Cambridge University Press.
- 2000: Geometry, Construction and Intuition in Kant and his Successors, in: Sher, Gila & Tieszen, Richard (eds.), *Beyond Logic and Intuition: Essays in Honor of Charles Parsons*, Cambridge: Cambridge University Press, 186–218.
- 2001: *Dynamics of Reason: The 1999 Kant Lectures at Stanford University*, Chicago: University of Chicago Press.
- 2002: Geometry as a Branch of Physics: Background and Context for Einstein’s “Geometry and Experience”, in: D.B. Malament (ed.), *Reading Natural Philosophy: Essays in the History and Philosophy of Science and Mathematics to Honor Howard Stein*, Chicago: Open Court, 193-229. The author reconstructs Einstein’s reflection on the conditions of measurement and its philosophical background, including Helmholtz’s use of the notion of rigid body.
- Friedman, Michael & Nordmann, Alfred (eds.) 2006: *The Kantian Legacy in Nineteenth-Century Science*, Cambridge (Mass.): The MIT Press.
- Hagner, Michael & Wahrig-Schmidt, Bettina (eds.) 1992: *Johannes Müller und die Philosophie*, Berlin: Akademie Verlag.
- Hatfield, Gary 1990: *The Natural and the Normative: Theories of Spatial Perception from Kant to Helmholtz*, Cambridge (Mass.): The MIT Press. The author analyzes the conception of the relationship between mind, space, and geometry from Kant to Helmholtz. The development of Helmholtz’s view on that subject is reconstructed and discussed in detailed in chap. 5.
- Heidelberger, Michael 1994: Helmholtz’ Erkenntnis- und Wissenschaftstheorie im Kontext der Philosophie und Naturwissenschaft des 19. Jahrhunderts, in: Krüger 1994a, 168-185. The article offers a reconstruction of Helmholtz’s epistemological views in the context of nineteenth-century philosophy and science.
- 2006: Kantianism and Realism: Alois Riehl (and Moritz Schlick), in: Friedman & Nordmann 2006, 227-248. Here and in Heidelberger (2007), the author analyzes the relationship between

- Riehl and Schlick and maintains that Schlick was influenced by Riehl, in particular, in the development of his method of coincidence.
- 2007: From Neo-Kantianism to Critical Realism: Space and the Mind-Body Problem in Riehl and Schlick, *Perspectives on Science* 15.1, 26-48.
- Hendricks, Vincent F., Klaus Frovin Jørgensen, Jesper Lützen, & Stig Andur Pedersen (eds.) 2006: *Interactions: Mathematics, Physics and Philosophy, 1860-1930*, Dordrecht: Springer.
- Hentschel, Klaus 1990: *Interpretationen und Fehlinterpretationen der speziellen und der allgemeinen Relativitätstheorie durch Zeitgenossen Albert Einsteins*, Basel: Birkhäuser. The book offers a thorough analysis of the early philosophical interpretations (and misinterpretations) of special and general relativity. A detailed account of neo-Kantian interpretations and their connection with the debate on the philosophical consequences of non-Euclidean geometry is found in chap. 4.1.
- Holzhey, Helmut & Wolfgang Röd 2004: *Die Philosophie des ausgehenden 19. und des 20. Jahrhunderts*, 12. Bd.: *Neukantianismus, Idealismus, Realismus, Phänomenologie*, München: Beck. This book includes a detailed account of the life and work of the neo-Kantians, along with an overview of the historical development of the neo-Kantian movement and its context, including the philosophical reception of Helmholtz.
- Hyder, David 2006: Kant, Helmholtz and the Determinacy of Physical Theory, in: Hendricks et al. 2006, 1-43. The author emphasizes the line of transcendental argument that we find in Helmholtz (1847) and interprets the structure of Helmholtz's first geometrical papers as a development of the same line of argument: until 1869, Helmholtz believed that Euclidean geometry was entailed in his measurement postulates. For a detailed analysis of Helmholtz's inquiry on the foundations of geometry from 1868 to 1878, see Hyder 2009, chap. 6.
- 2009: *The Determinate World: Kant and Helmholtz on the Physical Meaning of Geometry*, Berlin: De Gruyter.
- 2010: German Scientific Epistemology and Early Analytic Philosophy, in: *The Oxford Handbook of the History of Analytic Philosophy*, edited by M. Beaney, Oxford: Oxford University Press.
- Jammer, Max 1993 [1957]: *Concepts of Space: The History of Theories of Space in Physics*, third, enlarged edition, New York: Dover Publications. The book offers an overview of different concepts of space from antiquity to recent developments in the philosophy of physical space.
- Janz, Nathalie 2001 : *Globus symbolicus: Ernst Cassirer, un épistémologue de la troisième voie ?*, Paris : Kimé. The book offers a detailed analysis of Cassirer's epistemology, with special focus on his conception of symbolism and its sources, including Helmholtz.
- Kant, Immanuel 1786: *Metaphysische Anfangsgründe der Naturwissenschaft*, Riga: Hartknoch; Akademie-Ausgabe 4, 465-565.
- 1787: *Kritik der reinen Vernunft*, 2 Aufl., Riga: Hartknoch; Akademie-Ausgabe 3.
- Klein, Felix 1872: *Vergleichende Betrachtungen über neuere geometrische Forschungen*, Erlangen: Duchert.
- 1898: Gutachten, betreffend den dritten Band der Theorie der Transformationsgruppen von S. Lie anlässlich der ersten Vertheilung des Lobatschewsky-Preises, *Mathematische Annalen* 50, 583-600.
- Köhnke, Klaus-Christian 1986: *Entstehung und Aufstieg des Neukantianismus: Die deutsche Universitätsphilosophie zwischen Idealismus und Positivismus*, Frankfurt am Main: Suhrkamp. This book offers a detailed account of the development of neo-Kantianism, its origins, and historical context. The author interprets Helmholtz and Lange as the proponents of a psychological direction of neo-Kantianism and analyzes the reception of this direction by the next generation of neo-Kantians, especially Cohen and Riehl.
- Königsberger, Leo 1902-1903: *Hermann von Helmholtz*, 3 Bde., Braunschweig: Vieweg. This work offers a detailed account of Helmholtz's life and work. Here unpublished manuscripts by Helmholtz, as well as numerous quotations from private letters and reports of discussions, were first made available.
- Krause, Albrecht 1878: *Kant und Helmholtz über den Ursprung und die Bedeutung der Raumschauung und der geometrischen Axiome*, Schauenburg: Lahr. Krause infers the apriority of geometrical axioms from that of space. His interpretation of the Kantian theory of

space motivated Helmholtz to make it clear that the general form of space might have a transcendental function in Kant's sense, provided that its specific axiomatic structure cannot be determined a priori.

- Kries, Johannes von 1935: Helmholtz als Physiolog, *Die Naturwissenschaften* 9, 673-693.
- Krüger, Lorenz (ed.) 1994a: *Universalgenie Helmholtz: Rückblick nach 100 Jahren*, Berlin: Akademie Verlag.
- 1994b: Helmholtz über die Begreiflichkeit der Natur, in: Krüger 1994a, 201-215. The author contrasts his reading of Helmholtz's epistemology with that of Cassirer (1940). Krüger maintains that Cassirer tends to overlook the realist aspect of Helmholtz's epistemology by interpreting his research program in phenomenalist terms. At the same time, he agrees with Cassirer that such program ought to be put in connection with early modern rationalist philosophy of nature and with Kant.
- Land, Jan Pieter Nicolaas 1877: Kant's Space and Modern Mathematics, *Mind* 2, 38-46.
- Lange, Friedrich Albert 1866: *Geschichte des Materialismus und Kritik seiner Bedeutung in der Gegenwart*, Iserlohn: Baedeker. Lange, as Helmholtz (1855), proposed a physiological interpretation of Kant's philosophy by assuming that the a priori is rooted in the psychophysical organization of the human mind.
- Lenoir, Timothy 1992: Helmholtz, Müller und die Erziehung der Sinne, in: Hagner & Wahrig-Schmidt 1992, 207-223. The author analyzes Helmholtz's relationship with Müller from 1855 to 1863. During that period, Helmholtz develops a pragmatic approach to physiology of vision and distances himself from Müller.
- 2006: Operationalizing Kant: Manifolds, Models, and Mathematics in Helmholtz's Theory of Perception, in: Friedman & Nordmann 2006, 141-210. The author interprets Helmholtz's theory of perception as an operationalist development of Kant's transcendental philosophy.
- Neuber, Matthias 2012: *Die Grenzen des Revisionismus: Schlick, Cassirer und das „Raumproblem“*, Vienna: Springer. The book offers a deep analysis of the epistemologies of Cassirer and Schlick. Their different ways to treat the relationship between space and geometry reflect a differentiation in the reception of Helmholtz (see also Ferrari 1994 [1991]; Ryckman 1991).
- Nordmann, Alfred 2006: Critical Realism, Critical Idealism, and Critical Common-Sensism: The School and World Philosophies of Riehl, Cohen, and Peirce, in: Friedman & Nordmann 2006, 249-274. The author shows how a selective reception of Helmholtz, along with scientists such as Hertz, Mayer, and Ostwald, in neo-Kantianism contributed to the development of Riehl's critical realism, on the one side, and Cohen's critical idealism, on the other.
- Parrini, Paolo 1979: *Fisica e geometria dall'Ottocento a oggi*, Torino, Loescher. The book offers an overview of the debate on the foundations of geometry in the nineteenth century, along with selected texts by Helmholtz, Poincaré, Schlick, and Cassirer, among others.
- Patton, Lydia 2008: Hermann von Helmholtz, *Stanford Encyclopedia of Philosophy*, <http://plato.stanford.edu/entries/hermann-helmholtz/>
- 2009: Signs, Toy Models, and the A Priori: From Helmholtz to Wittgenstein, *Studies in the History and Philosophy of Science* 40.3, 281-289. The author partially defends Helmholtz's empiricist account of the a priori against the Marburg neo-Kantians by using pragmatics to account for the role of a priori reasoning in translating between frameworks.
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- explain the relationship between geometry and experience: if there has to be such a relationship, there must be some epistemic reason for the use of geometry in physics.
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- 1977: *I sistemi dell'esperienza: Psicologia, logica e teoria della conoscenza da Kant a Wundt*, Bologna: Il Mulino. The author explores the interactions between psychology, logic, and theory of knowledge from Kant to Wundt. A section of the book is devoted to Helmholtz's psychology and epistemology and gives information on its reception in neo-Kantianism.
- 1980: *Le origini della psicologia scientifica*, Torino: Loescher. The concluding part of Poggi's book on the origins of scientific psychology is devoted to the Helmholtz-Hering controversy and to the psychological foundation of physiology by Helmholtz and Wundt.
- Pulte, Helmut 2006: The Space between Helmholtz and Einstein: Moritz Schlick on Spatial Intuition and the Foundations of Geometry, in: Hendricks et al. 2006, 185-206. The author reconsiders the aspects of Helmholtz's conception of space that have been overlooked by Schlick – namely, above all, Helmholtz's commitment to the idea of constant curvature of space and the inductive character of his approach to the foundations of geometry.
- Riemann, Bernhard 1867 [1854]: Über die Hypothesen, welche der Geometrie zu Grunde liegen, *Abhandlungen der Königlichen Gesellschaft der Wissenschaften zu Göttingen* 13, 133-152.
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- Schiemann, Gregor 1994: Die Hypothesisierung des Mechanismus bei Hermann von Helmholtz: Ein Beitrag zum Wandel der Wissenschafts- und Naturauffassung im 19. Jahrhundert, in: Krüger 1994a, 149-167. Here and in Schieman (2009), the author emphasizes the originality of Helmholtz's conception of science and contrasts it with classical mechanism, on the one hand, and with Kantianism, on the other. The author points out, in particular, Helmholtz's commitment to empirical and therefore hypothetical explanations.
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Willey, Thomas E. 1978: *Back to Kant: The Revival of Kantianism in German Social and Historical Thought, 1860-1914*, Detroit: Wayne State University Press. The book gives an account of the “back to Kant” movement in context and offers a detailed analysis of the development of social and historical thought in neo-Kantianism.