

# Accepted Manuscript

Reprint of: Assertion and denial: A contribution from logical notations

Ahti-Veikko Pietarinen, Francesco Bellucci

PII: S1570-8683(17)30065-4

DOI: <https://doi.org/10.1016/j.jal.2017.12.002>

Reference: JAL 482

To appear in: *Journal of Applied Logic*

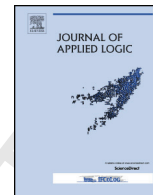


Please cite this article in press as: A.-V. Pietarinen, F. Bellucci, Reprint of: Assertion and denial: A contribution from logical notations, *J. Appl. Log.* (2017), <https://doi.org/10.1016/j.jal.2017.12.002>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Contents lists available at [ScienceDirect](https://www.sciencedirect.com)

Journal of Applied Logic

[www.elsevier.com/locate/jal](http://www.elsevier.com/locate/jal)

## Assertion and denial: A contribution from logical notations

Ahti-Veikko Pietarinen <sup>a,\*</sup>, Francesco Bellucci <sup>a,b</sup><sup>a</sup> Tallinn University of Technology, Estonia<sup>b</sup> Università di Bologna, Italy

## ARTICLE INFO

*Article history:*Received 26 October 2016  
Available online xxxx*Keywords:*Assertion  
Denial  
Frege  
Begriffsschrift  
Peirce  
Existential graphs

## ABSTRACT

This paper presents two major aspects of Frege's and Peirce's views on assertion and denial: first, their arguments for the notational choices concerning the representation of assertion and denial in Begriffsschrift (BS) and Existential Graphs (EGs), respectively; and second, those properties of BS and EGs which reflect their inventors' views on assertion and denial. We show that while Frege's notation has an *ad hoc* sign of assertion and an *ad hoc* sign of negation, Peirce has a sign of assertion which is also a sign of logical conjunction, and a sign of scope which is also a sign of negation.

© 2017 Elsevier B.V. All rights reserved.

## 0. Introduction

What is an assertion, how does it differ from a proposition? What is a denial, and how does it differ from an assertion? Philosophers of language and logic have been occupied with such questions at least since Frege's distinction between assertion and the content asserted, a distinction which is expressed in his notation by means of a sign of assertion (the *Urteilsstrich*). Frege has also been credited with being among the firsts to have made the point that negation is not the polar opposite of assertion.

Yet Frege was not the first and not even the most consequential philosopher of language and logic pronouncing upon assertions and denials. Peirce had a number of points to be made on assertion and denial that call upon new and much belated investigation and assessment. Just like Frege, he invented a novel logical notation that expresses quantificational logic, yet one that in significant ways was different both from Frege's notation and from the notation that has become the received language of first-order logic.

Frege invented the Begriffsschrift (BS) in 1879 [11], Peirce the Existential Graphs (EGs) in 1896 [26–35]. The present paper investigates two major aspects of Frege's and Peirce's views on assertion and denial: first, their arguments for the notational choices in BS and EGs concerning the representation of assertion and denial; and second, those properties of BS and EGs which reflect their inventors' views on assertion

\* Corresponding author.

E-mail addresses: [ahti-veikko.pietarinen@ttu.ee](mailto:ahti-veikko.pietarinen@ttu.ee) (A.-V. Pietarinen), [bellucci.francesco@gmail.com](mailto:bellucci.francesco@gmail.com) (F. Bellucci).

Download English Version:

<https://daneshyari.com/en/article/8904332>

Download Persian Version:

<https://daneshyari.com/article/8904332>

[Daneshyari.com](https://daneshyari.com)