

Response to reviewers for MIE2018
On Defining Bruxism (Id=147)
W. Ceusters and B. Smith

Dear Mr. Professor Ceusters

Congratulations!

Your submission "On Defining Bruxism (Id=147)" was accepted as Paper (Weak accepted) by the SPC.

Please, check your contribution and take the reviewers' comments into account.

Prepare your 5 pages for Full paper formatted according to the IOSPress template, including Vancouver style formatting of references. For more details, please see www.mie2018.org. Re-upload your contribution in .doc or .docx format no later than February 11th 2018. Please observe that this is final hard deadline.

We want to emphasize that your full paper will be part of the program and published only if Conference fee is paid for presenting author by February 28th 2018.

Reviewer comments:

Comments to authors:

Reviewer 1:

You drilled down nicely into the matter with sensible and logical lines of argumentation. I like how the paper nicely unravels a scientific dispute with a neutralizing and kind of sober approach that ties misdirected arguments down to ontological reasoning. It is also well written and easy to comprehend. Thus I recommended a strong accept. Three minor issues came to my mind:

I was maybe expecting a little more conclusive proposal on how the matter can be resolved in terms of laying out a way forward in greater details rather than just a synopsis of the dispute.

→ The last sentences of our conclusion indicate how we will do this: 'The next step is to reformulate *all* the assertions in [1-4] in a BFO-OGMS formalism that allows us to mimic the structure of reality in the bruxism domain along the lines outlined in [7, 8]. This would allow the experts to identify which views they hold within a framework which provides less room for 'semantic misunderstanding'. This will be published in an expanded journal version of this conference paper.

It cannot really be retraced how diligent the discourse analysis was performed, but I understand that that is pretty much method inherent.

→ Indeed, and also too much place consuming for a 5-page conference paper.

The only thing I didn't like very much is the opening with reference to google search hits in order to point out the significance since. That is not very informative in my view.

→ We removed that part of the sentence

Review rating:

1. Topic's importance to this conference: average (3)

The papers' relevance might be slightly diminished by how specific the addressed issues is and for the fact that it does not exactly touch (or only indirectly) on technology issues. However, the approach of mediation using ontological systematisation seems interesting and potentially scalable.

2. Scientific and/or practical impact to the topic: outstanding/excellent (5)

Good overall. It points out a reflected way forward on building a consistent understanding of how bruxism may be defined and more generally speaking, how definitional controversies may be resolved using ontological reasoning.

3. Quality of scientific and/or technical content: above average (4)

Appears to be good although the the accuracy of the performed discourse analysis can't really be retraced.

4. Originality and innovativeness: average (3)

Methods and issues addressed aren't very innovative in themselves but the application seems meaningful and the paper paves the way for resolving the debate at hand

5. Coverage of related literature: above average (4)

Seems to cover everything one would expect

6. Organisation and clarity of presentation: outstanding/excellent (5)

Very well written and easy to comprehend

Reviewer 2:

The authors elaborate on a clear definition of Bruxism and its subtypes based on discourse analysis of various sources giving definitions. The analysis revealed that a couple of "semantic misunderstandings" exist which need to be reengineered using BFO and OGMS. Particular issues have been identified at the level of particular and type as well as occurents and continuants distinctions.

The paper is well-written, not always easy to read and understand and clearly organized but focuses on a very specific behavior or disorder (depending whether having clinical consequences or not). In addition, it applies the principles of knowledge engineering to yet another domain entity so I do not see too much novelty.

→ Not really. We steer away from 'knowledge engineering principles' in favor of ontological principles and this because the knowledge engineering approach leads to too many problems. See: Brochhausen M, Burgun-Parenthoine A, Ceusters W, Hasman A, Leong TY, Musen M, Oliveira J, Peleg M, Rector A, Schulz S. Discussion of "Biomedical Ontologies: Toward Scientific Debate", *Methods of Information in Medicine*, 2011;50(3):217-36.

I think not all readers are familiar with these distinction so it might be worthwhile explaining them briefly.

Minor comment: I have read the last sentence of the Methodology section 10 times but could not get what the authors want to express. They may want to be a little bit more explicit here.

→ The distinction was explained in section 4.2 and references provided for readers who are (still) not familiar with it.

Review rating:

1. Topic's importance to this conference: average (3)

Good practices for knowledge engineering are of high importance but I think the paper does not introduce to many new thoughts and ideas into the topic area.

2. Scientific and/or practical impact to the topic: average (3)

As the paper focuses on a single indication "Bruxism" I consider the impact as being relatively low - unless you are an expert in bruxism.

3. Quality of scientific and/or technical content: above average (4)

Clear structure of the paper, good explanations, rationale well demonstrated.

4. Originality and innovativeness: average (3)

The paper just applies well established modeling principles (eg BFO) to yet another domain (a disorder/ phenomenon) in this case.

5. Coverage of related literature: above average (4)

Good coverage and choice of citations.

6. Organisation and clarity of presentation: above average (4)

Overall organization is good. There are some areas where clarity could be improved (see also comments to the authors).

If there are any questions left, please contact: spc@mie2018.org

Yours sincerely

Anne Moen, Chair, MIE2018 SPC

Adrien Ugon and Celia Boyer, MIE2018 SPC co-chairs

on behalf of the SPC