Author’s response to reviews

Title: The medical diagnosis as a linguistic game

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Author’s response to reviews:

Concerning manuscript:

MIDM-D-16-00235R2 "The medical diagnosis as a linguistic game"

Dear Editor (authors reply )

Comments of Karin Verspoor

1. Page 3 row 23 start point changed in starting points

2. Page 3 row 33 guide lines changed in guidelines

3. Page 4 row 2 reference was corrected

4. Page 4 row 3 original linguistic term changed in atomistic language element
5. Page 4 row 5 dialog was changed in dialogue

6. Page 5 row 3 of patients fitting changed in of patients, fitting

7. Page 5 row 9 and 10. The sentence: After giving the results of these experiment we describe exemplary 4 pathosoms fitting to these 4 cases was eliminated following the proposal of the reviewer

8. Page 5 row 23/24

A female, aged 55 years suffering from a firm lump in the mamma(2 tuple with 2 attributes changed in A female, aged 55 years suffering from firm lump in the mamma(2 tuple with 2 underscored attributes)

9. Page 5 row 42/43

Many thesauri could be retained changed in many thesauri could be obtained…..

10. Page 6 row 8/our system using an own coding system changed Memem7 using our own coding system

11. Page 6 row 15/16 environment like common SQL changed in environments like common SQL

12. Page 6 row 22/23 (electrokardiogramm) genetic finding is transformed changed in (electrokardiogramm) or genetic findings are transformed to
13. Page 6 row 38 a prototype of a disease was considered changed in
a prototype of a disease is considered


A pathophem is a sentence in a classification or a clinical pathway after its atomistic breakdown. After this breakdown, we have an object (a single word meaning a stem word in a linguistic sense)…

changed in

A pathophem is one object in a classification, clinical pathway or a publication after its atomistic representation. After this breakdown, we have an object (a single word meaning a stem word in a linguistic sense)

15. Page 7 row 1 following the the recommendation of the reviewer classification system changed in pathophem


“Lead” means that this pathophem is always present in a pathosom, “+++” means a frequency between 50% to 100%, “++” means a frequency of 10% to 49%, “+” 1% to 9.9% and “(+)” <1%

Changed in “Lead” means that this pathophem is always present in a pathosom and signifies a probability of 1, “+++” means a frequency between 50% to 99.9% or a probability of 0.5-0.99, “++” means a frequency of 10% to 49% or a probability of 0.1-0.49, “+” 1% to 9.9% or a probability of 0.1-0.99, and “(+)” <1% or a probability of <0.01.

17. Page 7 row 23 provide a set of diagnoses that is to match…changed in

Proposals of diagnoses occurred by matching a patient vector …..
18. Page 7 row 33 Critic of reviewer. Semantic network is not explained.

A sentence was included for explaining the meaning of semantic network.

Our semantic network is a classical semantic network for knowledge representation. It is a directed graph consisting of vertices, which represent terms, objects and concepts, and edges, which represent semantic relations between terms like ‘is-a’, ‘is-part-of’, ‘has-attribut-of’, ‘is-class-of’.

19. Page 7 row 41 to 47.

Critic of reviewer. “this also is too vague”

Paragraph Is changed by adding a sentence

.. by using semantic network context methods like “is-class” and others. For example: If you are searching for a concrete finger symptom/pathophem and you cannot find anyone there might be a corresponding symptom/pathophem about the hand which may fit.

20. Page 8 row 4 Software changed in software

21. Page 8 row 34

Critic of reviewer: Reference for CLEOS is lacking

… originally developed for testing CLEOS

changed in

originally developed for testing CLEOS [3-5]
22. Page 8 row 48

…for those pathosoms fitting best to the patient vector on a linguistic approach changed in
…for those pathosoms best fitting to the patient vector using a linguistic approach
…for those pathosoms which fit best to the patient vector using a linguistic approach

23. Page 8 row 60  Signifies  changed in  signify

24. Page 11 row 11-18

Criticism of reviewer “not clear what You did. An example of the approach is given.

An example is included

Mallet finger (Hammerfinger in German) is part of ICD-10 (M20.0), but originally not of Memem7. Tm identifies the term Hammerfinger as element of ICD-10 and this term was added to Memem7 (including its counterpart in English).

25. Page 11 row 50-51

A diagnosis is either a alpha-numeric code as a ICD-10 code [22,27] or a verbal description of a disease such as refractory anemia with an excess of blasts(RAEB)

changed in

A diagnosis is either an alpha-numeric code such as a ICD-10 code [22,27] or a verbal description of a disease such as “refractory anemia with an excess of blasts” (RAEB)…

26. Page 12 row 1

Critic of reviewer: What is the purpose of a tree structure?.
A sentence clarifying the purpose was included.

The tree structure is one of the basic structure for the semantic network and provides ‘has-attribut’ relationships.

27. Page 13 row 1-2

Nowadays it is common sense that both computer linguistic and computer technology…. changed in

Nowadays it is common sense that both computational linguistics and computer technology

28. Page 43 row 3

However, the evidence that by this way the quality… changed in

However, the evidence that this will improve quality of medicine…

3

29. Page 13 row 4-47

Critic of reviewer: “This is all speculation and out of context……”.

We accept this critic and eliminated the whole paragraph from the discussion including references 41,42,43.

30. Page 14 row 2 Andreas

Critic of reviewer : but You are matching and exploring a semantic network”. How this approach is distinct.
We add one sentence explaining the difference:

After the search function of Memem7 a list of possible pathosoms explaining the patients complaint is given with focus on linguistic and semantic network heuristics.

31. Page 14: row 20 interference engine changed in inference engine

32. Page 14: row 25
Critic of reviewer: What is the meaning of restricted dialogue

Restricted dialogue is explained by one sentence:

Restricted dialogue means that, so far, only 5 tuple can be analyzed by the system.

33. Page 14 row 25/26

After the dialog the user is provided changed in

After this dialogue the user is provided

34. Page 14 row 35
i-mathematical changed in Mathematical

35. Page 14 row 42 diagnosis changed in diagnoses
36. Page 14 row 47 setting changed in settings

37. Page 14 row 52

38. …however, so far, as the authors survey the literature no open source application of an electronic history taking system is available such as Open EMR or Open HER (literaturstellen)

   Changed in
   …however, so far, as the authors survey the literature only few open source application of an electronic history taking system is available such as Open EMR or Open HER [44,45]

39. Page 14 row 60

   (3) a player can improve his results by improving his knowledge changed in

   a player can compare his knowledge of a pathosom with the content of the pathosom (disease vector of the pathosom)

40. Page 15 row 12 with up to n-tuple is changed with up to 5-tuple

41. Page 15 row 13 In 46.7% is changed for 46.7%

42. Page 15 row 18 difficult changed in difficult???
Critic of reviewer: this is then not an independent test.

The test was done independently and no changement of Memem7 was done during testing. After the test there were done corrections to ensure that the pathosom not found in test 3 (the test, which results are described in the publication). The next test (test 4, not included in the publication) with the same test cases revealed much better results.

The changed sentence is therefore: Our much less impressive data, however, will improve with each new test as the mistakes found in the test are corrected after completing the test. The tests are part of a continuous improvement quality circle which provides algorithms to enhance both semantic network and pathophemes (disease symptoms).

44. Reference 41 is eliminated as consequence of reviewer criticism point 29

45. Reference 42 is eliminated as consequence of reviewer criticism point 29

46. Reference 43 is eliminated as consequence of reviewer criticism point 29

Changements done in the manuscript without proposal of reviewers

47. The name of one author was not correct. The name Patrick Albu was changed in Patricius Albu in the heading
48. The name of one author was not correct. The name Patrick Albu was changed in Patricius Albu in the authors address.

49. Introduction: Memem7 is a linguistic approach to medical knowledge approach.  
Changed in

Memem7 is a linguistic approach to medical knowledge

50. Introduction: similar approaches provides are reliable and feasible tool for…

Changed in similar approaches provides reliable and feasible tools for

51. Page 1 row 10   …[1,2, Graber,Sadegh]  changed in  [1,2]

52. Page 10 row 1  One example of these 68 pathosoms …

Changed in

One example of these 68 pathosoms (inflammatory breast cancer, supplement Tab 5. And 6)

53. Page 11 row 15 RAEB exists in two variants termed….

Changed in

RAEB exists in three variants termed RAEB-1, RAEB-2 and RAEB-F being subsets of the RAEB pathosom
54. Tables 1-5 are unchanged

55. Supplement LEA D Tab.8 changed in LEAD

56. References changed as cause of the corrections necessary

57. …memem7 changed in Memem7