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Jaina logic: a model-based analysis of the seven predications

Miguel López-Astorga[1]

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Abstract. A relevant part of Jainism is its logic. Jaina logic gives tools to communicate and argue. However, it is problematic from the western perspective: it seems to be a paraconsistent system, that is, a system in which a fact and the denial of that very fact can be true at once. Those difficulties have been overtaken from interpretations that ignore classical standard logic and assess Jaina logic from a point of view more linked to reasoning and the real use of natural language. One of those interpretations have resorted to the theory of mental models, and that interpretation is the one the present paper develops. This is because the theory of mental models has been updated and, hence, any relation provided between Jaina logic and this last theory should be updated as well.
Keywords: Jaina logic; mental model; possibility; predication.

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1. Introduction

Jainism is a religion with followers nowadays. Beyond its metaphysical and ethical doctrines, a very important part of the Jaina view of reality is logic. However, its logic is not always easy to assume in the West. This is because Jaina logic appears to be a paraconsistent logic (e.g., Ganeri, 2004). As it is well known, a paraconsistent logic is a logic in which a fact and its negation can be true at the same time. On the contrary, classical logic, in general, cannot accept a statement such as (1).

(1) p is the case and not-p is the case at the same time.

The problem with Jaina logic is that it seems to admit sentences such as (1). This circumstance has led to many analyses of many kinds and from various perspectives (e.g., Bharucha & Kamat, 1984; Ganeri, 2002, 2004; López-Astorga, 2018; Matilal, 1991; Priest, 2008). The present paper is intended to develop two of those analyses, which, in principle, are compatible: those of Ganeri (2002, 2004) and López-Astorga (2018).

Perhaps the main mistake that is made when Jaina logic is addressed is to tend to consider it from the perspective of western logic. This is a mistake because Jaina logic can be analyzed alone, paying attention only to its context, and ignoring the requirements provided by other logics. If this is done, most of its difficulties can disappear. This is the direction the analyses this paper will be based on seem to follow. Ganeri (2002, 2004) offers an interpretation including formal structures in which Jaina logic is not controversial: that interpretation eliminates its apparent problems of inconsistency, that is, its apparent problems related to the acceptance of assertions such as (1). Assuming those ideas, López-Astorga (2018) tries to link Jaina logic to the theory of mental models (e.g., Bell & Johnson-Laird, 1998; Johnson-Laird, 2004, 2006; Johnson-Laird & Byrne, 1991, 2002; Johnson-Laird, Byrne, & Schaeken, 1992; Johnson-Laird, Girotto, & Legrenzi, 1999; Oakhill & Garnham, 1996). Given that the theory of mental models is a framework trying to describe the real way people reason and understand language, the essential goal in López-Astorga's (2018) account is to attempt to show that, if the theory of mental models is right, Jaina logic is closer to the actual mental processes involved in reasoning and language understanding than western standard logic. This is because the theory of mental models is not a logic. One might see some communalities between it and classical logic. However, the works supporting the theory often highlight the differences between them (see,

[1] Institute of Humanistic Studies, Research Center on Cognitive Sciences, Universidad de Talca, Chile.
Email address: milopez@utalca.cl
ORCID ID: https://orcid.org/0000-0002-6004-0587.

e.g., Johnson-Laird, 2012). In this way, if Jaina logic is also deemed as an approach related to the real manner individuals make inferences and understand natural language, the relations between Jaina logic and the theory of mental models may be more than thought.

However, the latest works authored by the proponents of the theory of mental models (e.g., Byrne & Johnson-Laird, 2020; Espino, Byrne, & Johnson-Laird, 2020; Johnson-Laird, Quelhas, & Rasga, 2021) have updated it. The result has been an even more general approach that is able to explain a greater number of phenomena. The aim of the present paper is, in this way, taking the previous analyses by Ganeri (2002, 2004) and López-Astorga (2018) into account, to relate Jaina logic to the most updated theses of the theory of mental models. That will allow arguing that the conceptual tools those theses offer appear to capture what Jaina logic establishes in a much more exact manner. Thus, this paper will have three different parts. The first one will account for the general lines of Jaina logic, its apparent difficulties, and Ganeri's (2002, 2004) interpretation. The second one will describe the basic ideas of the theory of mental models, the relations López-Astorga (2018) indicates between it and Jaina logic, and the new proposals of the theory that should be considered in the relations. The final section will show the links that can be introduced between Jaina logic and the updated version of the theory of mental models.

2. Jaina logic as a consistent logic

As it is well known, Jaina logic is an Indian logic that presents seven predications. To indicate which those predications are, this paper, as Ganeri (2002, 2004) and López-Astorga (2018), will follow the text by Vādideva Sūri (1967, Chapter 4, Verses 15-21). The predications are (2) to (8):

(2) "Arguably, it (i.e., some object) exists" (Ganeri, 2002, p. 269; brackets in text).
(3) "Arguably, it does not exist" (Ganeri, 2002, p. 269).
(4) "Arguably, it exists; arguably, it doesn't exist" (Ganeri, 2002, p. 269).
(5) "Arguably, it is 'non-assertible'" (Ganeri, 2002, p. 269; quote marks in text).
(6) "Arguably, it exists; arguably it is non-assertible" (Ganeri, 2002, p. 269).
(7) "Arguably, it doesn't exist; arguably it is non-assertible" (Ganeri, 2002, p. 269).
(8) Arguably, it exists; arguably it doesn't exist; arguably it is non-assertible" (Ganeri, 2002, p. 269).

The problems of inconsistency (or consistency) appear to be clear in some of these predications. (4) already seems to be problematic, since it appears to refer to an object that exists and does not exist at once. On the other hand, (5), (6), (7), and (8) seem to make the situation even worse: according to Ganeri, the concept of non-assertible indicates "simultaneous assertion and denial" (Ganeri, 2002, p. 269). However, the formal solution Ganeri (2002, 2004) gives is not hard to understand. That solution is described hereunder, but with not exactly the same symbols (see also López-Astorga, 2018). If these equivalences are assumed,

p: any object.
1: truth.
IFF: biconditional relation, that is, a relation providing that both of its two clauses can only be either true at the same time or false at the same time.
V: existential quantifier indicating the existence of at least one element of a kind or set.
P: any perspective.
X-Y: relation establishing that Y can be derived from X.
0: falsity.
¬: negation.
&: conjunction meaning 'and'.
?: non-assertible.

Under Ganeri's framework, the following definitions can be built for each predication:

Predication (2): p = 1 IFF VP (P-p).
Predication (3): p = 0 IFF VP (p-¬p).
Predication (4): p = 1 & 0 IFF [VP (P-p)] & [VP (P-¬p)].
Predication (5): p = ? IFF VP [¬(P-p) & ¬(P-¬p)].
Predication (6): p = 1 & ? IFF [VP (P-p)] & {VP [¬(P-p) & ¬(P-¬p)]}.
Predication (7): p = 0 & ? IFF [VP (P-¬p)] & {VP [¬(P-p) & ¬(P-¬p)]}.
Predication (8): p = 1 & 0 & ? IFF [VP (P-p)] & [VP (P-¬p)] & {VP [¬(P-p) & ¬(P-¬p)]}.

This is the way Ganeri (2002, 2004) ousts the Jaina predications from (1). Now, (4), (5), (6), (7), and (8) have nothing to do with (1), and, hence, with paraconsistency. In fact, given Ganeri's proposal, it can be said that Jaina logic does not have consistency problems.

This can be seen in a clearer way if the analyses of other authors' accounts Ganeri (2002, 2004) makes are considered (López-Astorga, 2018, also comments on those Ganeri's analyses). Following with the same symbols, in Ganeri's view, Bharucha and Kamat's (1984) proposal leads to express (5) as follows:

Predication (5): p = ? IFF VP [P-(p & ¬p)].

This causes an inconsistency, as the same perspective P allows arguing (1), that is, p & ¬p. Nevertheless, according to Ganeri, Matilal's (1991) proposal is not better. Assuming the latter proposal, the same predication is expressed in this manner:

Predication (5): p = ? IFF VP [(P-p) & (P-¬p)].

Again, the same perspective leads to (1), that is, to p and ¬p, and, therefore, to inconsistency.

Ganeri (2002, 2004) considers these problems not to be possible with his proposal. This is because, in the logic he proposes,

(9) VP [¬(P-p)] ≠ VP (P-¬p).
(10) VP [¬(P-¬p)] ≠ VP (P-p).

In a logic admitting the essential theses of classical logic, or akin to this last logic, (9) and (10) do not hold. The correct expressions would be:

(11) VP [¬(P-p)] = VP (P-¬p).
(12) VP [¬(P-¬p)] = VP (P-p).

But Ganeri (e.g., Ganeri, 2004, p. 361) stresses that the logic he presents is not necessarily related to western traditional logic. In his view, that gives the possibility of (9) and (10) being assumed in his system, which in turn allows ignoring consistency problems such as those derived from the approaches Bharucha and Kamat (1984) and Matilal (1991) introduce (all of this is also explained in, e.g., López-Astorga, 2018).

As indicated, it can be thought that a theory such as the one of mental models can be compatible with Jaina logic understood in this way. The next section describes the general lines of that theory and how its old version has been related to Ganeri's account.

3. Jaina logic and the theory of mental models

The theory of mental models is a cognitive framework. One of its main points is that, when interpreting sentences, people often think about the possible circumstances in which those sentences can be the case (e.g., Johnson-Laird, 2012). Those possible circumstances are considered models, and, to detect all of them, it is necessary to pay attention, spend time, and reflect in detail. The theory of mental models captures this aspect too (e.g., Johnson-Laird, 2012). Nonetheless, it is not related to the aims of the present paper. This paper is intended to argue that the Jaina predications can be related to mental models in the sense the theory of mental models understands them, whether or not individuals make the necessary effort to identify those models. So, this issue will not be dealt with here.

According to the original version of the theory (e.g., Johnson-Laird, 2012), if the conditional and disjunction are taken as examples, the models, in principle, match with the situations in which those operators are true in standard logic. In the case of disjunction, that is, a sentence such as (13),

(13) Either p or q.

The models are those in (14).

(14) [p, q], [p, not-q], [not-p, q].

The square brackets in (14) stand for models. In the first one, the two disjuncts are the case, However, in the second and third ones, one of the disjuncts does not happen (q in the second one and p in the third one). This is when a disjunction such as (13) is inclusive, that is, when it allows its two disjuncts to be true at the same time, which is the circumstance the first model in (14) shows. Nevertheless, the theory of mental models can also deal with a disjunction when exclusive. It is enough not to accept that very model, the first one in (14), that is, [p, q], as correct. In any case, whether inclusive or exclusive, there is a combination disjunction never admits: the one in which the two disjuncts are false, which is missing in (14).

As far as the conditional is concerned, it can be stated that a conditional is a sentence with a structure such as the one of (15).

(15) If p, then q.

Its models are those indicated in (16).

(16) [p, q], [not-p, q], [not-p, not-q].

As in disjunction, the models remind classical logic. (14) are the cases in which a disjunction is true in that logic. Likewise, those in (16) are the cases in which the conditional is true in that very logic. In fact, the models in (16) are the ones corresponding to the material interpretation of the conditional, which is the interpretation classical standard logic follows. According to that interpretation, there is only a situation in which a conditional is false: the combination that is not in (16), that is, the combination of p and not-q (see, e.g., Jeffrey, 1981).

Nevertheless, the theory of mental models has always tried to distance itself from logic (e.g., Johnson-Laird, 2010). Sets of models such as (14) and (16) are not really just the situations in which disjunction and the conditional, respectively, are true in standard logic. The models have an iconic nature (e.g., Johnson-Laird, 2012). This means that they represent reality as far as working memory allows it. For instance, the first and the second models in (14) denote two different scenarios. Nonetheless, those scenarios are very similar. They are identical in all respects except in the truth value of q: in the first model q is real, in the second one it is not.

On the other hand, the theory of mental models is not a formal framework. The meaning of the words appearing in the sentences and the pragmatic circumstances in which they are used can modify the number and the characteristics of the models. In the literature on the theory many examples of this are to be found. An instance for disjunction is (17).

(17) Either you go to India or you go to New Delhi.

If 'p' stands for that 'you go to India' and 'q' is that 'you go to New Delhi', the models of (17) are those in (18).

(18) [p, q], [p, not-q].

The third model in (14) is not possible: it is not possible to go to New Delhi without going to India.

Regarding the conditional, something similar can occur. Given (19),

(19) If you go to India, then you go to New Delhi.

The models do not match with the ones in (16), but with the ones in (20).

(20) [p, q], [p, not-q], [not-p, not-q].

The second model in (20) is different from the second model in (16). The truth values of the clauses are reversed. The reason is the same as in the previous case: when we are in New Delhi, we are necessarily in India.

As mentioned, many examples of this kind can be found in works supporting the theory of mental models (e.g., Orenes & Johnson-Laird, 2012). However, maybe what is important now is to see how all of this has been applied to Jaina logic. In López-Astorga (2018), models such as those indicated were assigned to the predications. With not exactly the same symbols, the result was as follows (see López-Astorga, 2018, p. 195):

Predication (2): [p].
Predication (3): [not-p].
Predication (4): [p], [not-p].
Predication (5): […].
Predication (6): [p], […].
Predication (7): [not-p], […].
Predication (8): [p], [not-p], […].

If the theses described above are taken into account, and the square brackets are considered models in the way explained, this appears to properly express the sense of Jaina logic. The key seems to be that, in the theory of mental models, while a particular model cannot include a clause and its negation, a same clause can be affirmed in a model and negated in another model. Thus, predication (2) refers to a possible model in which p is true. The possible model in predication (3) points out the opposite: p is false. On the other hand, predication (4) indicates that two models are possible: one in which p is true and another one in which it is not. With regard to predication (5), the value of p is unknown for the only possible model (the dotted line represents that). Two models correspond again to predication (6). In one of them, p is true, but it is not possible to know whether or not p is real in the other one. In the same way, predication (7) is related to two models as well, the difference from predication (6) being that p is not true in the first one. The last predication, predication (8), is the only one linked to three models: p can be true in one of them, p can be false in the second one, and nothing can be said about p in the third one (an explanation akin to this one is in López-Astorga, 2018, p. 195). Thereby, the Jaina predications are understood as expressions referring to models. This can be because of the iconic nature of models. The different models in predications (2) to (8) are very similar. In fact, the only difference between them is whether or not p is the case. In some of them, the circum-

stances allow p both to be the case and not to be the case. This is what happens in the model of predication (5) and the last model of predications (6) to (8).

Nonetheless, the theory of mental models has been updated. Perhaps that update can help better show what the seven predications of Jaina logic mean. In the described version, the relation between models in sets such as (14), (16), (18), and (20) is disjunctive. The reason for this is that the models cannot be the case at once. But in the updated version, the proponents of the theory prefer to speak about 'conjunctions of possibilities' (e.g., Khemlani, Byrne, & Johnson-Laird, 2018). Thus, the possibilities can hold at the same time, at least, as far as there is no information revealing otherwise. This is because, in a conjunction, all the conjuncts must be true. In this way, the form in which the models are expressed changes (see also, e.g., Johnson-Laird & Ragni, 2019). For instance, (14) is expressed as (21).

(21) Possible (p & q) & Possible (p & not-q) & Possible (not-p & q).

The models of (16) are presented as in (22).

(22) Possible (p & q) & Possible (not-p & q) & Possible (not-p & not-q).

On the other hand, the conjunction of possibilities of (18) is (23).

(23) Possible (p & q) & Possible (p & not-q).

In the case of the last example, that is, (20), the models are shown as in (24).

(24) Possible (p & q) & Possible (p & not-q) & Possible (not-p & not-q).

Besides, this version of the theory defines some essential modal concepts too (see Khemlani, Hinterecker, & Johnson-Laird, 2017):

- Possible: a clause is possible if it is at least in a possibility of a conjunction of possibilities.
- Necessary: a clause is necessary if it is in all of the possibilities of a conjunction of possibilities.
- Fact: when a conjunction of possibilities has only one conjunct, what is affirmed in that conjunct is a fact.

Thereby, for instance, in (22) not-q is possible (it appears only in the last possibility). However, in (23) p is necessary (it appears in the two possibilities).

This can lead to understand the theory of mental models as a framework similar to modal logic. If it is interpreted in that way and works such as those of Ganeri (2002) and Priest (2008) are reviewed, it can be thought that the task of relating the theory of mental models to Jaina logic should produce arguments, results, and conclusions akin to those corresponding to the task of relating Jaina logic to modal logic. Nevertheless, some comments are possible in this regard.

First, although it is true that the theory of mental models has been linked to modal logic (e.g., López-Astorga, 2020), and that, accordingly, to relate Jaina logic to the theory of mental models could also be somehow to relate Jaina logic to modal logic, the nature of those relations would be very particular. What has been argued is just that the theory of mental models can fulfill some of the requirements to become a modal logic. For example, it has been said that a modal logic should be coherent with what the Aristotelian square of opposition in its modal interpretation provides (Fitting & Mendelsohn, 1998), and that the mental models theory does be coherent with that square (López-Astoga, 2020). Thus, the only point that has been tried to make is that, from the theory of mental models, a modal logic could be constructed. Of course, that hypothetical modal logic would have an advantage: it would be more or less similar to the way human beings think. However, all of this is different from affirming that the theory of mental models is just a modal logic describing human reasoning.

On the other hand, the proponents of the theory of mental models often give arguments intended to show that the theory is different from logic in general and modal logic in particular. For instance, they explicitly say that the possibilities corresponding to a sentence are not the circumstances in which that sentence is true in classical standard logic. This is because of the conjunctive character of the links between possibilities. As pointed out, the circumstances in which a sentence is true in logic cannot be linked by means of conjunctions: they cannot be true at once. Nevertheless, under the theory of mental models, the possibilities of a sentence can be accepted at the same time (e.g., Johnson-Laird & Ragni, 2019).

In addition, the possibilities are not formulae in the updated version of the theory. Logic requires formulae but the possibilities in the latest version of the theory of mental models keep being iconic (e.g., Khemlani et al., 2018). So, it is not suitable to speak about formulae in the theory, but only about models that try to iconically reproduce reality.

As far as modal logic is specifically concerned, the theory of mental models allows inferring conclusions that are not correct in general in this last logic. For example, from (13) and (21), one might state that a disjunction such as (13) enables to conclude that both of its disjuncts (i.e., both p and q) are possible. The first conjunct in (21) already allows deriving that conclusion by itself. Besides, the second conjunct in (21) points out that the first disjunct in (13), that is, p, is possible again. Likewise, the last conjunct in (21) also shows that the second disjunct in (13), that

is, q, is possible. Nonetheless, there are not any systems of modal logic in which an inference of this kind is valid (see, e.g., Khemlani et al., 2017).

Indeed, modal logic works by resorting to possible worlds (see, e.g., Kneale & Kneale, 1962) or, if preferred, state-descriptions (see, e.g., Carnap, 1947). In this logic, a formula is possible if 'it is true in at least one possible world or state-description to which access is achievable from the actual world'. Hence, supposing that (13) and its disjuncts were formulae, the fact that (13) were true in the actual world would not ensure that there is at least a possible world in which its first disjunct (p) is true, or that there is at least a possible world in which its second disjunct (q) is true. In fact, a disjunction can be true even if one of its disjuncts is absolutely impossible. To be true, disjunction only needs that one of its disjuncts is. Furthermore, that a disjunction is true in the actual world does not secure that there is at least an accessible possible world or state-description in which it is true too. For example, (17) can be true in the actual world. However, if the person corresponding to 'you' in (17) dies, there are not any future possible worlds or state-descriptions in which (17) is true.

Besides, possible worlds or state-descriptions as defined in modal logic cannot be easily compared. They include a high number of formulae that makes them hard to process by the human mind (see, e.g., Partee, 1979) So, the possibilities of the conjunctions of possibilities in the theory of mental models cannot be related to possible worlds or state-descriptions. As shown in conjunctions (21), (22), (23), and (24), the possibilities have a restricted number of clauses, and they do not correspond to sets of possible worlds or state-descriptions (see also, e.g., Johnson-Laird & Ragni, 2019).

Thereby, the theory of mental models is not by itself a modal logic. A modal logic might be built from it in the future. Nevertheless, the theory is not that currently. Therefore, what is interesting now, beyond the fact that several works have continued to develop this updated version of the theory (e.g., Khemlani & Johnson-Laird, 2019; Quelhas, Rasga, & Johnson-Laird, 2019; Ragni & Johnson-Laird, 2020), is how the new version can be applied to Jaina logic.

4. Jaina logic and the conjunctions of possibilities

If it is not forgotten that the predications refer to perspectives, maybe it is not difficult to offer an account of them using the updated version of the theory of mental models. Prediction (2) speaks about only one perspective, which allows arguing p and can be named 'P_1'. Accordingly, its 'set of possibilities' could be (25).

(25) Possible (P_1 & p).

Given that there is only one possibility in (25), it actually shows a fact: one perspective (P_1) is the only possible perspective, and that perspective enables to argue that p is the case.

Predication (3) considers only one perspective too. This new perspective can be called 'P_2' and allows arguing in favor of not-p. Hence, its model is (26).

(26) Possible (P_2 & not-p).

The possibility in (26) indicates a fact as well. Again, only one perspective is possible, but, in this case, it is P_2, which leads to not-p.

The case of predication (4) is different. It refers to the two previous perspectives (P_1 and P_2), and, therefore, to the two alternatives that can be argued from them (the existence of the object and its denial, i.e., p and not-p). In this way, the conjunction is (27).

(27) Possible (P_1 & p) & Possible (P_2 & not-p).

Thus, both P_1 and P_2 are possible. This implies that both p and not-p are possible as well.

Regarding predication (5), it points out again that there is only one perspective, which can be 'P_3' and from which neither p nor not-p can be argued. This last idea means that both p and not-p are possible along with P_3, the relation between p and not-p being an exclusive disjunctive relation. Both of them cannot happen together. Nevertheless, one of them should be true in the case of P_3, even if it is not possible to argue in favor of it in a clear way. So, from 'either p or not-p, but not both of them' and P_3, the following conjunction of possibilities can be deduced for (5).

(28) Possible (P_3 & p) & Possible (P_3 & not-p).

Remember that (21) is the conjunction of possibilities for (13), and that, if the disjunction is exclusive, its first conjunct should be removed. Thereby, in (28), P_3 is necessary, since it is the only admissible perspective in predication (5), but p and not-p are possible.

Thus, it is not hard to identify what the conjunction of predication (6) can be:

(29) Possible (P_1 & p) & Possible (P_3 & p) & Possible (P_3 & not-p).

In (29), all of the elements mentioned are just possible: P_1, p, P_3, and not-p.
The conjunction of predication (7) is very akin:

(30) Possible (P_2 & not-p) & Possible (P_3 & p) & Possible (P_3 & not-p).

Again, all the elements involved, P_2, not-p, P_3, and p, are only possible.
Lastly, the conjunction of possibilities of predication (8) is also obvious:

(31) Possible (P_1 & p) & Possible (P_2 & not-p) & Possible (P_3 & p) & Possible (P_3 & not-p).

Once again, in (31) there are not any necessary elements. All of them, P_1, p, P_2, not-p, and P_3, are possible.
This account seems to capture what the seven predications provide. Therefore, it can be said that the relation between Jaina logic and the updated version of the theory of mental models is not difficult to establish either.

5. Conclusions

The theory of mental models has been updated. But that fact does not have an influence on the relations between the initial version of the theory and Jaina logic provided in the literature. The main goal of the present paper has been to show that the updated version also captures what the seven Jaina predications point out, and that the link between the two approaches can still keep being accepted. Therefore, the conclusions of this paper cannot be very different from those to which previous studies have come with the application of the initial version of the theory of mental models to Jaina logic (e.g., López-Astorga, 2018). On the one hand, and this is something already shown in works such as the ones of Ganeri (2002, 2004) too, Jaina logic cannot be analyzed from the parameters of classical standard logic. The way the West understands logical inferential processes is not the only manner. For that reason, it should not be expected that logics coming from other traditions, for example, Indian logic or Chinese logic, accurately follow the rules, requirements, and principles of western standard logic. From this point of view, any attempt to explain an oriental logic such as Jaina logic from the conceptual device of western logics can have as a result a bad interpretation of that oriental logic. In fact, that can even cause a strained modification of the basic characteristics of the oriental logic. Obviously, this would lead to a change of sense in the latter logic.

In this way, and also following the same previous literature, the possibility of providing links to the theory of mental models can be very enlightening. That can reveal that, if the theory of mental models really describes the manner the human mind works, Jaina logic is much closer to that manner than western logic. It is possible even to argue that the actual aim of Indian logic was not to propose logical systems such as the western ones, but to try to show the real way individuals think (e.g., López-Astorga, 2018).

Furthermore, it is interesting that the proponents of the theory of mental models insist, as mentioned, in several works, on that their approach is not related to propositional logic or modal logic. Without ignoring the utility and relevance these last logics can have in different fields, according to the theory of mental models, they do not describe how the human intellectual processes are. In many cases, the conclusions people obtain when reasoning seem to match with the results expected under the western formal logical systems. However, as shown in most of the works supporting the theory of mental models quoted above, this is not always like that. Those works reveal that the theory of mental models is more coherent with the usual human inferential behavior than the western logics. Hence, the conclusion is evident: although Jaina logic might not have been considered in the past because it appears a paraconsistent logic admitting contradictions, perhaps it is a more suitable logical framework in at least one sense. It seems to better account for how human beings truly interpret language and reason from those interpretations.

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