

A Cognitive Framework of the Phenomenon of Humor

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Abstract: This article presents a framework for a cognitive aspect of the phenomenon of humor. Its key notions are the illusory model (IM) and the realistic model (RM). The recognition of their effect on humor stimulus implies the occurrence of humor. The framework proposed offers a parallel and alternative to various humor theories, a formulation of the cognitive aspect of these theories in terms of RM and IM.

Key words: cognitive framework, observer's models, illusory model, realistic model, humor classification, humor appearance.

Introduction

Prominent researchers and philosophers devised ingenious theories of humor which describe cases of its appearance. The connection with some of this work with the present framework is postponed to Section 3 and Section 4. Note that our knowledge is generally obtained following the recipe of mistakes and new trials. After reaching understanding of the truth, one of the functions of humor is to make farewell to the mistakes through humor, and thus, to release tension and stress. (In this sense a mistake is a potential source of humor.)

Using this observation, we design our cognitive framework of humor using two models: a realistic model (abbreviated as RM) and an illusory model (abbreviated as IM). The definitions of RM and IM are given in Section 2. The recognition and the simultaneous effect of these two models during the humor stimulus implies the humor appearance. The well-known protagonist of Miguel Cervantes, Don Quixote, acts following various IM models. They are denied by the RM models of his adventures' companion, and this constitutes the main trend of humor in the famous Cervantes book.

In the present framework, the notions "illusory" and "realistic" acquire a broader meaning than the corresponding "erroneous" and "practically realizable" (cf. Section 2).

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As shown in Section 1, it is possible to formulate in a piece of humor information more than one pair (RM, IM), depending on the viewpoint of the observer (the person who perceives the humor information). To formulate explicitly IM and RM models is sometimes not straightforward, as it is, e. g., in Example 1, Section 1. This important point is discussed in Section 2. In Section 3 we show how the present framework can give a parallel and alternative formulation of a cognitive aspect of various humor theories. Discussing the incongruity theory, some counterexamples given by Robert L. Latta (1999)] against the incongruity theory are explained in terms of (RM, IM) pairs. In Section 4 we apply the framework to the humor classification of Issac Passy.

1. Examples

Before introducing the details of the framework, let us consider some examples. In these examples, we distinguish the appearance of RM or IM as immediate or “explicit,” when demonstrated visually, orally, by action, etc., or as “implicit,” if implied by the viewpoint of the observer.

Example 1. Our cat Musya was seen standing in front of the computer, with two front paws on the keyboard and the back paws on the chair. It moved its head to the left and right, together with the appearing and disappearing figures on the screen, as if it worked with some computer program.

IM: (explicit). The mere observation of Musya activity, as if working with a PC program.

RM: (implicit). Cats are not able to work with PC programs.

Example 2. Two friends A and B are talking. A: Recently I learned that barefoot walking helps against all diseases. B: It is good that you told me this, because every time when I awake in the morning with my shoes on my feet, I wonder why I have a headache.

RM: (implicit). Drinking too much alcohol before sleep implies headache in the morning and forgetting to take out shoes.

IM: (implicit). Barefoot sleeping helps against alcoholic headache.

Example 3. A small boy told his father: today during geometry lesson after the blackboard examination the teacher expelled me out of the classroom. The father: why? The son: because the teacher drew a line between himself and me saying that at the end of the line stands a fool, and I asked at which of the ends. The observer can formulate, e. g., two pairs of models: from the viewpoint of the teacher RM (teacher), IM (teacher) and from the viewpoint

of the boy RM (boy), IM (boy). (We say that the observer has the viewpoint of a subject, if at least one of his opinions: RM or IM is also an opinion of this subject.)

RM (teacher): At the line's end close to the boy stands a fool.

IM (teacher): At the line's end close to the teacher stands a fool.

RM (boy): The boy engaged with examination, wanting to clarify the teacher's assertion about the line's end as if the examination continued.

IM (boy): At the end of the line which is close to the teacher stands a fool.

2. The Framework

To describe and comment on the present framework, we define RM, IM, and the cognitive reason of humor appearance. By a model we understand an observer's concept of any mental or physical activity and process, their results, some reality, or description of object(s) and relation between objects. The observer can form his opinion of the model due to its realization and other values associated with the model, such as cognitive, aesthetic and moral values, e.g., the four Plato's types: truth, justice, beauty, goodness, etc.

2.1. Definitions of RM and IM

By RM we understand a model which conforms to some of the accepted opinions of the observer from his definite viewpoint. On the contrary, IM is a model not conforming to some of the accepted observer's opinions from his definite viewpoint. For an ordinary decision (respecting the common sense) the model should be qualified as IM if it is against a natural success practice or regulations. Furthermore, if it is incomplete, contradictory or unclear, e.g., dubious or symbolic, etc.

Remark 1. The pair (RM, IM) has two aspects—"opinion aspect" and "model aspect." The "opinion aspect" is expressed by conformity or non-conformity of elements of the pair (RM, IM) to the observer's opinion. The "model aspect" expresses the specific model contents of RM and IM. Since this model contents can be changed, the framework gives the possibility to formulate some cognitive relations of various humor theories in an alternative and parallel manner (cf. Section 3).

Due to the "opinion aspect," the RM and IM are juxtaposed and enter the relation of incongruity, since RM conforms and IM does not conform to observer's opinion. This incongruity, however, is not necessarily transferred to incongruity between the corresponding

“model aspects,” as demonstrated by Example 6 in Section 3. The same conclusion follows from the framework application to humor theories which are different from the incongruity theory in Section 3. There the model content of RM is in general not incongruous to the model content of IM.

Remark 2. According to above definitions, IM (respectively RM) does not necessarily express erroneous (respectively, realizable) model, but generally indicates non-conformity (respectively, conformity) with some personal or collective opinion. For example, the Don Quixote’s illusory models to fight against windmills are erroneous. At the same time, his IM are more complicated personal opinions. More exactly, Don Quixote considers himself a fighter against injustice. (This makes him not only a ridiculous personage but arouses also some sympathy.)

2.2. Definition of a Cognitive Framework of Humor

In order to understand any kind of humor information (visual, verbal, etc.), the observer recognizes some appropriate models. When comparing these models to one another, and with the humor information, the observer can distinguish between them a number of RM and IM. The cognitive framework of humor consists in performing the above steps if the observer has the disposition to do this.

The recognition of the simultaneous application effect of selected RM and IM during the whole course of humor stimulus information implies the humor appearance.

We note that by observer’s disposition we mean (the frequently momentary) readiness of the observer to use her mentality, emotions, and energy to recognize one or more pairs (RM, IM) according to her experience, personal values, choice of viewpoint, etc. The amusement is essential to the interest to appreciate humor. By “amusement,” we understand (along with its common meaning) an almost instant achievement of a harmony between the personal values and the humor comprehension. The novelty of surprise (if present in the humor stimulus) enhances the amusement.

The above note implies that understanding a particular piece of humor is an individual phenomenon. At the same time, it is a collective one, as far as the dispositions of different observers are similar.

Remark 3. To recognize, and compare models requires from the observer mental work, creating some tension which is relaxed, for example, by laughter, and more generally, as a reward of understanding the humor.

Remark 4. In recognizing the models, it is sometimes not straightforward to formulate explicitly RM and IM. However, they are frequently implied, due to the large supply of information available in the observer's consciousness. This information which is not always easy to make explicit during the short time of perceiving the humor, is frequently realized only partially, by separate examples.

Maybe the simplest and best illustration of this point can be found in the work of Henri Bergson (1911[1900]), which is given here in the following form.

Example 4 (following Bergson). Consider a speaker who interrupts his speech periodically by one and the same (meaningful or not) gesture or sound. After a number of such repetitions the reaction of public to such performance will be humorous.

We note that the successful practical activities in Nature are flexible, i.e., adjustable to circumstances and ideas. On the contrary, raggedness usually fails to succeed. Hence, we have:

IM: Rigidity of speaker's conduct.

RM: Flexibility of speaker's conduct.

We can hardly expect that the observers in the audience would formulate the IM, RM pair in such generality as above. They rather understand this generality implicitly, by examples, as a result of personal experience.

For another case of non-straightforward formulation of RM and IM, we refer the reader to Example 6 in Section 3 below.

3. Application to Humor Theories

In this Section, we discuss application of the framework to some humor theories, i.e., we discuss how the framework elucidates a cognitive aspect of these theories by the use of RM and IM, in cases when they can be formulated. This is the case of the humor theories discussed below, since the (RM, IM) pairs are typical for the model content of these theories. (For the relief theory the existence of the pair (RM, IM) as a cognitive element is a framework assumption.)

Each humor theory can be considered as a specific realization of the humor phenomenon. The present framework respects these specific realizations and gives a parallel and alternative formulation of a cognitive aspect of these humor theories in terms of RM and IM.

For a more detailed discussion of humor theories and more complete references, we refer the reader to studies such as Salvatore Attardo (2014) and Matthew M. Hurley et al. (2011).

3.1. Application to the Incongruity Theory

In this theory, the humor appears when incongruity exists between a concept and the real situation connected with the concept (e.g., James Beattie [1776]), Henri Bergson [1911 (1900)]).

Let in the present framework RM describe the real situation and IM describe the corresponding concept. Let both opinions be related by an incongruity model. In this case, the framework parallels the incongruity theory. Such are the cases of Examples 1 and 2 from Section 1.

To show that the incongruity theory is not universally applicable, Robert L. Latta (1999) gave (among other arguments) some humor examples. In the formulation of these examples there is no formal incongruity. We show how two of these examples (given here not literally) can be elicited by the present framework.

Example 5 (following Latta). Some birds fly south in autumn because it is too far to walk. (The original form of the example is given as a riddle.)

The common-sense opinions of the observer are:

RM: These birds fly south to warmer sites.

IM: These birds fly south because it is too far to walk.

Example 6 (following Latta). The example deals with a woman who thinks that when she eats, she gets fat and feels bad. When she can't eat, she again feels bad. She decides that since she is going to feel bad either way, she might as well be thin. Note that there is a problem of adjusting the amount of admissible eating with the bad feeling. Then the decision "might as well be thin" is not serious, since the woman has not declared a practical decision about eating regulation.

Hence, we have:

RM: In order to get thin, it is necessary to regulate eating.

IM: Since the woman feels bad when eating and also if she can't eat, she decided she might as well be thin.

The humor consists in the woman's deviation from the natural regulation "giving to receive" (expressed by RM), i.e., the absence of the woman's readiness to invest some effort to succeed. Remark that there is no formal model incongruity between RM and IM. On the contrary RM supports IM.

Latta uses another observer's viewpoint and gives another explanation of the humor appearance in this example, which are connected with difficulties in a straightforward understanding of the woman's statement.

3.2. Relief Theory

According to the relief theory, laughter appears as a release of psychical tension. (Sigmund Freud's view was similar to this).

The present framework distinguishes two cases.

Case 1. The leading stimulus is external, coming to the observer as a humor information discussed in Section 2. The momentary tension to recognize the models can be released by laughter.

Case 2. The leading stimulus is internal, i.e., psychical tension. To release it by humor, we suppose that the subject finds a suitable cognitive element describable in this framework as a (RM, IM) pair which triggers the release process. This pair in case 2 should be frequently non-straightforwardly expressible (cf. Example 4 and its discussion in Section 2).

3.3. Superiority Theory

The idea of the superiority theory is that the observer laughs at the shortcomings of others, or at inadequacies of a whole group, feeling himself superior thereby (Plato, Aristotle, Jeffrey H. Goldstein [1976]). Then, to the superior position is associated an RM (RM is a statement which describes this position) and to the inferior position of the ridiculed object the observer associates an IM (IM is a statement which describes this position).

3.4. Script-based Semantic Theory of Humor (Victor Raskin [1985] and **General Theory of Verbal Humor** (Salvatore Attardo and Victor Raskin [1991]).

These highly elaborated theories have a starting point—“Script opposition (SO).” One can get a corresponding formulation of a SO and apply in the framework. To be more specific and concise, we use as illustration a nice example given by Raskin (1985), which we render here not literally.

Example 7 (following Raskin). The example deals with a phone call with a bronchial whisper inquiring about doctor’s presence at home. The pretty and young doctor’s wife answered: “Not at home” and then invited with a whisper “Come right in.”

If the observer has the viewpoint of the patient, then we have:

(RM) Patient calls (1) (IM) Lover calls (2).

In case the observer’s viewpoint is the same as wife’s viewpoint, then RM and IM interchange places. In both cases, to the two opposite semantic scripts “patient” and “lover” correspond respectively (1) and (2). More generally, to the two opposite semantic scripts in SO theory correspond two opposite opinions RM and IM of the observer.

3.5. Benign Violation Humor Theory (A. P. McGraw and C. Warren [2010])

Three points define this theory:

1. Something threatens one’s sense of how the word “ought to be.”
2. The threatening seems benign.
3. The observer sees the both interpretation at the same time.

We parallel these points in the framework.

According to the definition of the framework the observer finds in a humor information (a) an IM; (b) an RM; (c) considers both RM and IM simultaneously. We identify the statement (1) with the IM from (a) and the more realistic interpretation (2) is identified with RM from (b).

3.6. Humor Theory as Detection of Mistaken Reasoning and as Reverse-Engineer of Mind (Matthew M. Hurley et al. [2011]).

According to this theory, humor helps to detect mistaken reasoning and helps to perfect the mind. In the framework, to the mistake one attributes an IM, which describes this reasoning.

4. Application of the Cognitive Framework to Isaac Passy's Classification of Humor

Since the humor is based on selection of the pair RM, IM we consider in our application the following points.

1. To show in any particular case the existence of the models RM and IM.
2. To demonstrate the humor appearance as a simultaneous application of these models during the whole course of humor stimulus.

With the above points 1 and 2 we find one and the same common cognitive reason of humor appearance in all the seven different classes of humor instances considered below. This provides the humor classification with a parallel and alternative formulation of the cognitive aspect of humor. We consider the following classes of humor instances, which Passy differentiates: antithesis, contamination, misunderstanding, ambiguity, exaggeration and diminution, parody, and irony. We apply the framework to examples from Passy (1993), but do not cite them here literally.

4.1. Antithesis

Given a thesis, let us have a sudden transition to its opposite (antithesis). The latter may be a thesis negation or near to negation. Although thesis and antithesis contradict each other, they admit comparison and so imply the humor appearance.

Example 8. Deals with a few phrases from a dialogue of Molière's "The Imaginary Invalid" ("Le Malade Imaginaire"). Argan has fallen in love with Bellina.

Bellina: No, I don't want anything. Ah! How much you say you have in your niche?

Argan... (declares the sum).

Bellina: Don't speak about money, please! Ah! And what is the sum of bills of exchange?

The observer can select the following models.

RM: Bellina shows a strong interest in Argan's possessions.

IM: Bellina declares formally to have no material interest.

Humor appears after simultaneous application of both models RM, IM elucidating the trends of Bellina's conduct during the whole vivid conversation.

Example 9. Deals with an infuriated wife who attacked her husband-professor with a heavy book. The husband is shocked and begs:

"Please not with this book, it is from the library."

The observer's possible models are:

RM: To eliminate conflict, the important thing to do is to calm the emotions.

IM: The husband chose the opposite to conflict elimination: the continuation of conflict but with another weapon in his wife's hands.

Humor appears after understanding the development of humor stimulus forecasted by the IM, compared with unrealized RM.

4.2. Contamination

The contamination consists in aggregation of different—even opposite—realities using a principle not sufficient for actual unification of these realities. In contradistinction to antithesis where an abrupt transition from thesis to antithesis occurs, in case of contamination the two different realities exist simultaneously.

Example 10. Deals with the opinion of the German writer H. Heine:

“In Goettingen are the smallest scientists and largest dogs.”

Observer's models can be:

RM: Heine shows criticism of Goettingen scientists.

IM: The scientists and dogs are juxtaposed on a basis of incompatible qualities.

The humor of Example 3 consists in the manner of criticism of scientists (RM) juxtaposing them to dogs (IM) in a way favoring dogs by dimension.

Example 11. Deals with a small child questioning his few years older sister.

“You always speak with mummy secretly as if you are a secretary.”

Possible observable models are:

RM: The child is ignorant about the meaning of the word secretary.

IM: The sister is considered a secretary due to the secret conversations.

Humor appears due to the child's ignorance (RM) and his ascribing a profession, which is non-appropriate to the sister's age, only by phonetic similarity (IM).

4.3. Misunderstanding

The misunderstanding arises from a meeting (or collision) between two independent realities.

Example 12. Deals with a few phrases from a long conversation of an old Greek comedy, “The Little Pot” (“Aulularia”) by Plautus. The young Likonid tries to tell Evklion

that he is the father of Evklion's daughter. Evklion only recently learned that his pot with money was stolen and thinks Likonid confesses he has stolen the pot.

Likonid: What bothers you was done by me, I confess... I confess my fault and beg your pardon...

Evklion: You have touched a foreign property and this is disgusting and punishable...

Likonid: I did this drunk and fallen in love, etc.

If the observer has the viewpoint [cf.1] of Likonid, he can formulate:

RM: Likonid tries to apologize to his father.

IM: Likonid has a rigid own position and does not understand Evklion's position.

From the viewpoint of Evklion one has analogously:

RM: Evklion was bothered by the stealing of the pot.

IM: Evklion has a rigid own position interpreting Likonid's arguments as an excuse for stealing the pot.

The humor attached to both viewpoints appears similarly. Each rigid position (IM) combined with each side's interest in his own problems (RM) makes the conversation long and extremely senseless.

Example 13. Deals with the mistake of a French lawyer who pleads in Latin in court about the cock of a certain Mathias. Instead of "gallus Mathiae" (the cock of Mathias), he repeatedly uses "galli Mathias" (Mathias of the cock).

Observer's models could be:

RM: The cock is the property of Mathias.

IM: The lawyer pleads about "Mathias of the cock."

The humor appears when comparing the lawyer's careless language use during the entire pleading (IM) with its realistic version (RM).

4.4. Ambiguity

Characteristic for ambiguity is an interaction and mutual penetration of two realities. At the same time, one experiences these realities' repulsion and mutual exclusion despite their unity, which words or actions indicate.

Example 14. Deals with a dialogue during an anatomy examination.

Examiner: If you insert a knife between the fourth and fifth ribs which place do you reach?

Student: The prison.

The observer can select the models:

RM: The answer to “knife insertion” as a surgery procedure is unknown to the student.

IM: The student interpreted the “knife insertion” as a criminal procedure with prison as the place to be reached.

Humor appears due to the student’s deviation during examination from the (unknown to him) medical answer (RM) to the (known) criminal answer (IM).

Example 15. Deals with a court procedure.

Judge: Your neighbor called you a donkey. Is it true?

Claimant: It’s true.

Judge: Then why did you complain?

The observer’s models can be:

RM: The claimant confirmed the occurrence of the neighbor’s offence.

IM: The judge interpreted erroneously the claimant’s answer as an absence of complaint.

Humor appears due to the judge’s misunderstanding and wondering (IM) about claimant’s confirmation of his complaint (RM).

4.5. Exaggeration and Diminution

Characteristic here is a transformation of something small and unimportant into something big, important, or extraordinary; and vice versa, transformation of the large and important into small and unimportant. The above transformations find application in irony and parody, which I discuss below.

Example 16 (of exaggeration). Deals with a merchant who suddenly has lost his property. He was so shocked that in a night his wig turned white.

The following observer’s models are possible:

RM: A strong shock can affect the human body and turn hair white.

IM: A strong shock can turn the wig white.

The humor comes from the claim that due to a strong shock the wig (IM) may turn white instead of the hair (RM).

Example 17 (of diminution). Deals with an inhabitant of Boston who has read for the first time Shakespeare. He said: “This is an extraordinary book. I do not believe that in Boston there are twenty persons who can write something similar.”

The observer’s models can be:

RM: During the whole history after Shakespeare no one wrote something similar.

IM: In Boston it is possible to find twenty persons among whom some can write like Shakespeare.

The humor appears in comparing the naive belief of the Boston inhabitant (IM) with the high Shakespeare achievements (RM).

4.6. Parody

In parody, one creates an image of an original (personality, idea, etc.), which is underestimated when compared to the original.

Example 18. Deals with part of a conversation from Molière's "The Forced Marriage" ("Le Mariage forcé") which parodies a philosophical idea. Sganarel visited the doctor of philosophy Marfurius:

Sganarel: Mr. doctor, I came to you ... to have your advice.

Marfurius: Mr. Sganarel, I ask you to change your manner of speech. Our philosophy advises to speak of all things with uncertainty... So you should not say, "I came," but "It appears to me that I have come."

Sganarel: Is it not true that I have come and you talk to me?

Marfurius: This is not certain and we have to doubt about all.

Sganarel: You make fun of me... etc.

The observer's models can be:

RM: Reasonable caution helps successful action.

IM: One should look everywhere for uncertainty, although it may be unreasonable.

The humor consists in expecting action results appearing with high uncertainty (IM) in contrast to reasonable caution (RM).

4.7. Irony

In the case of irony, one criticizes some personality, order, etc. to show how this personality or order look like in reality or how they should look like.

Example 19. Deals with an opinion about a book of the German writer H. Heine. "It was quite unnecessary that the government prohibited this book. The book was read also without the prohibition."

Possible observer's models are:

RM: The prohibition increases the interest of reading the book.

IM: To stop the public from reading the book, announce prohibition.

The humor appears when comparing the official book prohibition (IM) with the extraordinary interest in reading the book created by the prohibition announcement (RM).

Conclusion

The cognitive framework formulates the cognitive aspect of the humor phenomenon in an alternative and parallel way to various humor theories through the use of two models of the observer: the illusory model (IM) and the realistic model (RM). They are used by the observer to understand the trends of the entire course of the humor stimulus; the recognition of the role of the two models implies the appearance of humor. The application of the framework to examples of humor classification shows that in all the cases considered one can formulate the models RM and IM. Humor appears by simultaneous application of both RM and IM during the entire course of the humor stimulus, thus revealing trends in this stimulus which are described by the models. This gives a formulation of the cognitive aspect of humor appearance, which is a parallel and an alternative to humor classification.

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