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► **To cite this version:**

Camille Bataille. Cognitive Sciences, the Use of Sources and the Transmission of Marian Themes in Late Medieval Sweden. Jonas Carlquist; Virginia Langum. Words and Matter: the Virgin Mary in Late Medieval and Early Modern Parish Life, *Runica & Mediaevalia*, p. 118-132, 2015, 978-91-88568-64-9. hal-02541333

HAL Id: hal-02541333

<https://normandie-univ.hal.science/hal-02541333>

Submitted on 21 Apr 2020

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Cognitive Sciences, the Use of Sources and the Transmission of Marian Themes in Late Medieval Sweden

Camille Bataille

This article examines some perspectives and issues occasioned by the use of tools recently developed by the cognitive sciences. I choose to focus on the question of *transmission* of Marian themes, a topic which I believe could greatly benefit from a multidisciplinary approach. The domains in which the study of cultural phenomena by the cognitive sciences bring significantly new perspectives are: the study of rituals and their effects on the human mind, as well as the mechanisms of cultural transmission, and therefore, religious ideas. In order to present a case study of the application of some tools to medieval history, I will focus on a specific devotional practice commonly considered typical of the growth of the devotion to the Virgin Mary in the fifteenth and sixteenth centuries: the rosary.¹ My commentary will mostly draw from sources from the archbishopric of Uppsala (Sweden). Two questions occurred to me when I surveyed them: how can the tools of Cognitive Anthro-

¹ Jean-Pierre Albert (2005), used some tools from Cognitive Anthropology, but the publication of this article in an anthropology journal is suggestive of the current suspicion among French historians of 'discipline-foreign' tools. Yet, as early as 1994, Thomas Lawson outlined basic theories about religion developed by Cognitive Sciences in a history journal, see Lawson 1994. No significant historical work using those tools had been published prior to the publication of *Theory of the Modes of Religiosity* by Harvey Whitehouse, in the early 2000s. After this, Anne L. Clark's study 2004 is one of the few medievalists to have taken an interest in the field.

pology help to correct some analytical bias of the devotional practice of the rosary and how can these frame new perspectives on the transmission of Marian themes.

This article has two main axes. First, I would like to illuminate the limitations of the common theoretical approach of transmission in various studies of the rosary, arguing that an important question has been overlooked and that an analysis bias reinforces this. Secondly, I will present the tools of cognitive anthropology that can be effectively used in order to overcome those issues. I shall test these tools in practical situations in order to give some examples of their uses.

A Limitation in the Analysis of the Success of the Rosary

The devotion to the rosary is a para-liturgical form of devotion that experienced extraordinary growth in the last centuries of the Middle Ages. I would like to examine *why* it was so.

Among Swedish studies on the rosary, an important article by Sven-Erik Pernler in the *Acta* of the conference *Maria i Sverige* examines the developments of the Swedish brotherhoods of the rosary.² The article starts with a general overview on the expansion of the rosary in continental Europe, and especially the role of the Cologne brotherhood (1475) and the role of Alanus de Rupe, a Dominican friar who wrote treaties to foster the recitation of the rosary. As the article's title suggests, Pernler focuses on the brotherhoods, but he never addresses, even briefly, the question of why the rosary, or the rosary brotherhoods, succeeded so quickly. This is problematic, since some of Pernler's argumentation concerning the diffusion of confraternities is based on the supposedly inherent qualities of the rosary.³

² See Pernler 1996, *passim*.

³ *Ibid.*, p. 559: 'Förutsättningen för en bred, folklig andaktsform var härvid uppfyllt: några böcker var inte nödvändiga, och andakten kunde praktiseras enskilt likaväl som gemensamt.'

This absence of focus on the transmission and developments of the rosary owes partly to an analysis bias: one supposes that the rosary quickly spread because it is attractive *per se*. It is this attractiveness that has, in previous studies, been *presupposed*, but never *demonstrated*. Anne Winston, in a seminal article on the roots of vernacular texts of the rosary, wrote for example:

Why this text [the rosary] ... succeeded so dramatically has to do with the form of the text itself and with developments in popular religious piety.⁴

Anne Winston does not explain *why* the laity demanded this devotion so eagerly, nor does she explain what she means by 'popular religious piety'. One can imagine that 'popular piety' is an actual set of collective representations that forms a type, in opposition to other types, such as 'elitist piety' for instance. As a type, it pre-determines the content and the expectations of the historians in their study of the devotion.

Further in the article, Anne Winston suggests the attractiveness of the rosary is due to a formal transformation of devotion, which makes it more 'challenging and engrossing'.⁵ I believe it to be a brilliant intuition, but nevertheless, it does not explain why the rosary is more challenging: what Anne Winston does is simply make a statement, rather than setting out arguments to defend this 'challenging' character. Some other studies suggest more concrete causes for the success of the transmission. Jean-Claude Schmitt, when examining the brotherhood of Colmar, gives four causes for the success of the rosary: the absence of a registration fee, the desire to include the largest possible number of people, the use of vernacular *exempla* such as those by Alanus de Rupe, and the indulgences attached to the devotion.⁶ All those causes are valid, but still, they do not answer the essential question: why was the rosary considered to be interesting enough to be promoted? In her book on the

⁴ See Winston 1993, p. 619.

⁵ See item, p. 631.

⁶ See Schmitt 1970, *passim*.

cult of Saint Anne, Virginia Nixon follows numerous other studies in insisting that the promoters wished to include everybody in the brotherhood of the rosary. She quotes Johannes von Lamsbeym: *Hec fraternitas omnes recipit excludit neminem*.⁷ She suggests two more reasons for the success of the rosary: a favourable context, with a concern for salvation that would be stronger in the Germanic world than elsewhere in Europe,⁸ and a 'heartfelt devotion'.⁹ I argue that this is an empty argument, because it rests on an arbitrary attribution of a psychological state which is impossible to prove.

In Sweden, five scholars in particular have considered the evolution of the rosary devotion in the province of Uppsala in the later Middle Ages: Isaak Collijn, Gottfrid Carlsson, Sven-Erik Pernler, Alf Härdelin, and Ingela Hedström. Collijn, the Swedish philologist, stated that the book attributed to Alanus de Rupe, *De dignitate et utilitate psalterii BMV*, was printed for the first time in Lübeck in 1480, in Latin, then shortly afterwards in German. It was translated into Danish in 1492, shortly before the Swedish print of Mariefred in 1498.¹⁰ In an article on Mariefred, the only Carthusian house of Sweden, Collijn also mentioned as proof of the book's success that it was reprinted in 1506.¹¹ As an historian, Carlsson did not comment on the attractiveness of the practice in his 1947 article on the rosary confraternities. He just stated that the rosary is 'very practical' [*mycket praktfulla*].¹² The theologian Alf Härdelin is more concerned with the action of important men, such as the archbishop Jacob Ulvsson.¹³ The study of Sven-Erik Pernler, also a theologian, which I already mentioned, also focused on the brother-

⁷ Johannes von Lamsbeym, *Libellus perutilis de fraternitate sanctissima Rosarii et psalterij beate Marie virginis*, Mainz, Peter von Friedberg, 1495 (GW M14218); from Nixon 1999, p. 68.

⁸ See Nixon 1999, chapters 3 and 5.

⁹ See item, p. 69.

¹⁰ See Collijn 1934, p. 168.

¹¹ See Collijn 1935, p. 166.

¹² See Carlsson 1947, p. 1.

¹³ See Härdelin 2001, *passim*.

hoods. Finally, the philologist Ingela Hedström's stimulating study of the Swedish prayer books contains an important development on the rosaries found in this material, and quotes Anne Winston to explain the propagation of the devotion.¹⁴

None of those studies specifically addresses the issue of the transmission of the rosary by itself, nor have I found any dealing with other areas of Europe. Therefore, this absence gives me some ground to consider the Swedish literature as representative of the logical biases in the analysis of the source material, which strengthens the improbability of answering the question of attractiveness of the rosary. I believe that those biases can be corrected by a different approach.

An example illustrates those biases. Among the promoters of the rosary in Sweden Clemens Martini (d. 1527) is a prominent name. This Birgittine monk entered Vadstena in 1495, after having studied at the University of Uppsala.¹⁵ Gottfrid Carlsson declares, without referring to any source, that Clemens Martini soon became the main promoter of the rosary. A letter from Clemens has survived. Dated from 1504, this document is addressed to a monastery of nuns from Östergötland, probably the cistercian nunnery of Vreta.¹⁶ Clemens Martini explains in this letter that another Cistercian nun, the abbess of Askeby, asked him to register the name of all the nuns under her supervision in the brotherhood he just established. Clemens also writes that in order to facilitate the practice of the rosary, he send them a 'psalter of Our Lady in Swedish'.

Gottfrid Carlsson thinks that this translation of the 'psalter of Our Lady' mentioned by Clemens Martini is in fact a translation in old Swedish of the *De dignitate et utilitate psalterii BMV* of Alanus de Rupe.¹⁷ Kept in Stockholm, the large codex of 200 pages was

¹⁴ See Hedström 2009, pp. 300–308.

¹⁵ Carlsson 1947, p. 6.

¹⁶ Ibid.

¹⁷ Stockholm, KB A 2, in-folio, 40x27 cm. This manuscript has been edited by Geete 1923–1925. Alanus de Rupe's text is registered under the reference GW

copied in 1534 after an exemplar written either by the General Confessor of the Birgittine order, Johannes Mathei (d. 1524), or by Clemens Martini.¹⁸ Gottfrid Carlsson does not comment much on the attribution of this codex to Clemens Martini, suggesting only that both men could have written the book.

Several decades later, Sven-Erik Pernler draws largely on Carlsson's article and argues for a Clemens Martini as the main promoter of the rosary. His main support is the supposed attribution of Cod. Holm. A 2 to Clemens Martini.¹⁹ In other words, Sven-Erik Pernler uses the translation of Alanus de Rupe's *De dignitate et utilitate psalterii* to characterize the type of devotion to the rosary that Clemens Martini might have had.²⁰

Another source mentioned by Sven-Erik Pernler is a small book of Marian content with an emphasis on the Seven Joys and the Seven Pains of the Virgin, which also contains a list of the members of the rosary brotherhood of Vadstena.²¹ This register was written in the hand of Clemens Martini in 1522.

Three documents, according to Sven-Erik Pernler, are supposed to come from Clemens Martini. His name being linked to several sources related to the rosary, it seems only logical to think him a zealous devotee of the rosary. But when reading the sources in such a way, however, one attempts only to express the conformity of Clemens Martini's Marian devotion to a presupposed devotional ideal. The source becomes a tautology: why did a devotee of the rosary produce this text? – Because he was motivated by his devo-

M39205. The *Gesamtkatalog der Wiegendrucke* also gives as related texts: M3918420 (*De psalterio B.M.V.*), and M39183 (*Sixtus IV: Bulla confirmationis et indulgentiarum psalterii virginis Mariae*). These texts are included in the 1498 edition.

¹⁸ On the attribution of authority of SKB A 2, see Geete 1923–1925, p. XXVIII–XXXI and Härdelin 2001, p. 293.

¹⁹ Other researchers think that Johannes Mathei could be in fact the real author of this codex. See for example Härdelin 2001, p. 293.

²⁰ Pernler 1996, p. 561.

²¹ Uppsala, UB C 449. The list of the members of the rosary brotherhood is edited in the appendix of Carlsson 1947.

tion to the rosary. And why was he devout? – He produced some texts, so obviously he was. As we can see, the reasoning is biased.

With such an analysis, we miss the actions and choices of the individuals. Sven-Erik Pernler (and I restate, I took his study as representative of a general trend) introduces us to an individual who is not an agent, in the sense that what Clemens Martini only does is to conform himself to the idea that we have of a devotee to Mary. There is space only for the illustration of what Jean Bazin terms ‘customary characteristic behaviour’ [*comportement coutumier caractéristique*], which is arbitrarily attributed.²² This can lead to a false essentialisation of the studied object, with the impossibility of explaining why certain practices are more successful than others. In this respect, it is not necessary to address the issue of attractiveness of the rosary, because it is normal for a devotee of Mary to be attracted by Marian devotion.

Thus far, two elements have been identified:

1. A question to which the actual use of the sources cannot properly answer: ‘Why is the rosary attractive?’ The authors do not address the question (Pernler, Carlsson), or the reasons given are tautological propositions (Nixon, Härdelin), or there is the possibility of a deepest cause (Schmitt, Winston).
2. Studying the sources with the archetype “a devotee of Mary from the end of the Middle Ages” only furthers the impossibility of answering the question.

Applying Cognitive Sciences as a Solution to This Limitation

How can we solve those questions? A formal examination of the practice of the rosary may help. Anne Winston has shown that a rosary is a psalter enriched by meditations on the life of Christ.²³ The manuscript of the Arnamagneana Collection of Copenhagen,

²² See Bazin 2008, p. 42.

²³ See Winston 1993, p. 632.

AM 422, 4^o, is an example of this development. It is a Swedish book of prayers which contains *clausulae* after each rosary stanza.²⁴ These are invitations to meditate, as Alf Härdelin reminds us.²⁵ The addition of life-of-Christ meditations to a psalter distinguishes the rosary from older forms of prayer recitation. However, there are several formal characteristics of a rosary.

The first formal characteristic of a rosary is its iterative character. Alanus de Rupe proposed six different manners to pray the rosary, all including the repetition of *Ave Marias*.²⁶ In AM 422, 4^o, a tale relates the apparition of the Virgin who commands a specific number of *Ave Marias* and *Pater Nosters*:

Read my psalter three times fifty Ave Maria and one Pater Noster for each tenth Ave Maria and one Credo with each fifty Ave Maria, that is in all three Credo [*Läs min psaltare trem sinnom fämtighi Ave Maria oc ena Pater noster widh hwaria tionda Ave Maria oc ena Credo widh hwaria fämtionde Ave Maria thät är alz tre Credo*]²⁷

The second formal characteristic of a rosary is the importance of the practice lies in its performance. Jean-Claude Schmitt, for example, cites the *Determinatio* of Michael Francisci, a text from 1476. Michael Francisci is one of the champions of the rosary in Cologne. He insists on the *communicatio orationum*,²⁸ the necessity of saying the rosary each week in order to *really* belong to the brotherhood. The inscription on the roll of the brotherhood is not in itself enough to belong to the community of the rosary. There must be a performance, too.

I would add two more formal characteristics of the rosary. The third is that the actions composing the recitation of the rosary do not explicitly relate to the professed goal of its performers. How can repeating a discourse in a rigid order and meditating on the life of an agent help to preserve the reciter from danger?

²⁴ See Hedström 2009, pp. 481–485.

²⁵ See Härdelin 2001, p. 289.

²⁶ See Winston 1993, p. 630.

²⁷ See Geete 1907–1909, nr 121 p. 240.

²⁸ See Schmitt 1970, p. 99.

The fourth formal characteristic is that even if the performers do have the choice between several different types of rosary, they must conform themselves to a single sequence of actions. Performers cannot pray two rosaries at the same time. For example, one does not begin a set of 150 *Ave Marias* divided into thirds and change in the middle to 33 *Aves* divided into thirds.

Those four formal characteristics: Redundancy, Obligation of performance, Disjunction between the actions and the professed goal, and Rigidity are constitutive of a ritual, according to the characteristics of rituals put forward by two cognitive anthropologists, Pascal Boyer and Pierre Liénard.²⁹ The choice of this definition of 'ritual' among others is motivated by the authors' caution with the use of this concept, allowing us to avoid the methodological problems brought to light by Philippe Buc.³⁰ Indeed, none of our three manuscript examples (Stockholm, KB A 2; Uppsala, UB C 449; Copenhagen, KB AM 422, 4°) describe the performance of praying the rosary, nor do they call it a 'ritual'. But I believe that the definition of ritual given by Boyer and Liénard, in its synthetic aspect, makes it applicable outside a specific model. I also believe that refusing to apply the concept of 'ritual' in the study of the medieval practice of the rosary for methodological reasons is too restrictive. Indeed, the medieval producers of the rosary documents did not think they were producing 'rituals'. But not using the concept for this reason means that a cultural object, the rosary, cannot be understood by historians because our own concepts were not thought of by medieval practitioners.

²⁹ See Boyer and Liénard 2008, p. 291.

³⁰ See Buc 2003, passim. Buc suggested that only a certain type of sources seems to have affinities with a given social theory of ritual, and not a certain type of ritual. Bypassing this limitation means using a definition of ritual that overcomes the particular uses of the concept by the different theories, which I believe can be found in the Boyer and Liénard's definition of ritual. It also means using different types of sources in studying the same ritual, which is one reason I chose Stockholm, KB A 2 (a 'propaganda' text), Uppsala, UB C 449 (a list of confraternity members), and Copenhagen, KB AM 422, 4° (a prayer book).

By choosing to use the concept of 'ritual' in the study of the rosary, we 'insist not on the substantial characteristics [of the concepts] but on the constructed and purely relational [characteristics] of the referent of those concepts (social relations)'.³¹ Bearing this limit in mind, the concept of ritual according to the definition of Boyer and Liénard will be the one used in the rest of this study.

The cognitive study of religion had much interest in the rituals, and especially, in the manner in which the religious rituals are transmitted. According to Robert N. McCauley and E. Thomas Lawson's *Ritual Form Hypothesis*, the form of the ritual is the dominant variable of its transmission.³²

Lawson and McCauley have proposed several categories of rituals, which have been tested and validated empirically by at least one study.³³ Without going into too much detail, they have shown that some rituals have definitive effects and therefore, do not require repetition. Their effects are not permanent. Such rituals are referenced as 'Category 1' rituals in Lawson and McCauley's typology.³⁴

The 'Category 2' rituals that they describe have temporary effects. They must be re-enacted. Their effects lack a reversing ritual because they are temporary and can be held concurrently. Their emotional stimulus is generally weak.

The rosary belongs to Lawson and McCauley's Category 2 ritual. It is indeed a practice with temporary effects: the prayers addressed to Christ or the Virgin Mary are instantly communicated. Their effects lack a reversing ritual and can be held concurrently. Finally, the performance of the rosary generally does not tend to arouse high emotional response. The psalter cannot be considered as a ritual, because although it shares most of the characteristics of the rosary, it has no obligation of performance to be effective. A

³¹ See Morsel 2012.

³² See Lawson and McCauley 1990; 2002.

³³ See Barrett and Malley 2003.

³⁴ See for example Lawson and McCauley 1990, pp. 127–129; McCauley 2001, pp. 126–130.

psalter is a set of prayers, in which the semantic content matters to make the prayers efficient. A rosary is a set of prayers performed in a specific way, in which the semantic content matters less than the material form of its utterance to make it efficient.³⁵ The evolution of the psalter toward the rosary can therefore be seen as an evolution from prayer towards a ritual. The ritualisation of the devotion starts in the thirteenth century, according to Anne Winston, who explains the transition as motivated simply by the piety of the promoters of the rosary: the 'heartfelt devotion' for the rosary.³⁶

Nevertheless, we can see two other reasons in the process of ritualisation of the rosary that explain the success and the attractiveness of this practice. First, Harvey Whitehouse, as well as Lawson and McCauley, have shown that some ideas are better transmitted with a cultural support, such as a ritual.³⁷ The form is then important in the transmission of religious ideas. Since the fundamental goal of the promotion of the rosary is to nourish the piety of the laity, as Anne Winston explains, the ritualisation expresses a will for a more efficient transmission.³⁸ In insisting upon a ritual enactment technique (i.e. the *communicatio orationum*), Michael Francisci transmitted the idea of the necessity of a constant re-enactment of the rosary as a way to actualise the link between the community of the living *confratres* and the deceased. Performance is necessary in the ritual construction. In this regard, ritualisation occurs because it pertains to the process of actualisation of a community, drawn on the model of the whole *Ecclesia*:

Third, it is by the way of this communication that the confraternity exceeds all the brothers... and thus in this confraternity there is a daily communication of certain benefits between the brothers...

³⁵ On the significance of content for the ritual participants, see for example Lawson and McCauley 1990, chap. 3; Lawson 1994, p. 491; Barrett and Lawson 2001, pp. 198–199.

³⁶ See Winston 1993, p. 69.

³⁷ See Whitehouse 2001, *passim* and Lawson and McCauley 2002, *passim*.

³⁸ See Winston 1993, p. 632.

established piously and securely a least once a week, in the manner of the Catholic Church³⁹

Secondly, another important development in cognitive science has been to show the role of the content of information in cultural transmission. Pascal Boyer has built a central theory, which states that the best transmitted representations are those that violate our intuitive expectations.⁴⁰ They are therefore called 'counter-intuitive'.

There are different degrees of counter-intuitiveness, depending on whether the violation is superficial or more profound. Boyer and some other scholars, such as Justin Barrett, argue that the most efficiently transmitted representations are those that are *minimally counter-intuitive*, that is, those that violate our expectations only slightly.⁴¹

To put it broadly, our intuition, in the presence of a new object such as a previously unknown human being, will infer some characteristics just by labeling this object as human: it is self-propelled, needs to eat, does not fall apart, has desires and its actions are motivated by goals. A new object like the Virgin Mary is counter-intuitive: our intuition is violated by a human who does not reproduce according to our intuitive biological expectations: a virgin cannot normally be a mother. The concept of a virgin mother has therefore more chances to be transmitted.

I must confess: I could not find any counter-intuitive elements in the text of the *Ave Maria*, which might suggest that no cognitive advantage explains the attractiveness of the rosary. However, the meditations on the life-of-Christ attached to the repetitions of the *Ave Maria* are, indeed, counter-intuitive. I already mentioned the *clausulae* of AM 422, 4° as an illustration of this fact for the

³⁹ *Tertio ex operum communicatione quoad confratres haec fraternitas ceteras excedit... et sic in illa fraternitate est quotidiana bonorum quorundam communicatio inter confratres... ut saltem semel in hebdomada pie et secure instituit ad instar ecclesiae catholicae...* See Scheeben 1951, p. 101.

⁴⁰ See Boyer 2001, *passim*.

⁴¹ See Boyer 1998, *passim*; Barrett 2008, *passim*.

Swedish material. Alanus de Rupe has also revealed another way to include meditations. In Stockholm, KB A 2, the Swedish translation of his Latin treatise on the rosary, the twelfth chapter is on the *xv fructher* (fifteen fruits) that one gathers by praying the rosary.⁴² To each word of the *Ave Maria* is set a meditation: *Ave* helps to keep out sin; *Maria* makes the performer spiritually aware; *Plena* underlines the desire of the one praying to be full of good things, etc. Each of these propositions starts with *wi skulom ffaa...*, which means '[In saying this word] We shall obtain...'. Each word bears a theme of meditation, and *some of them are counter-intuitive*. In the volume 36 of *Analecta Hymnica*, the Psalter of the Virgin number II, in its first stanza, reads: 'Hail the glory of the most excellent tree (...) whose leaf never faded, the son born of a virgin'.⁴³ Two propositions are counter-intuitive: a tree whose leaves do not fall violates our intuitive biology, and a virgin cannot normally be a mother. Another example taken from the same volume of *AH* is the rosary number 6. In its first stanza, we read: 'Which the Virgin without fault conceived from a breath'.⁴⁴ A breath that conceives violates our intuition. Henceforth, we see that the meditations contain some counter-intuitive elements. The effect is to foster the transmission of the rosary. I then argue that adding to the form (ritualisation), the counter-intuitive content (the meditations) contributes to make the transmission of the rosary more efficient. And here are two reasons that make the rosary an attractive practice.

Let us go back to the ritualisation aspect for a moment. Previously I cited, without further elaboration, that scholars have shown that ritual is a cultural support for the transmission of some ideas. They were actually speaking of *extremely* counter-intuitive ideas. I also said that minimally counter-intuitive ideas are better transmitted. Conversely, the most counter-intuitive ideas are less likely to be transmitted. Amongst the meditation themes of the rosary,

⁴² See the edition by Geete 1923–1925, pp. 476–477.

⁴³ *Ave lignum excelsum glorie / Secus aqua plantatum gratia / Cuius numquam defluxit folium / Quia virgo geniti filium*. See *Analecta Hymnica* (1901), 36: II.

⁴⁴ *Quem Virgo carens vitio / De flamine concepisti*. See item, 36: 6.

at least one is strongly counter-intuitive, according to the encoding method submitted by Justin Barrett: the Assumption of the Virgin.⁴⁵ Such an event describes the change of state of an object: the Virgin or at least, her body. It is the body of a virgin mother (first violation), which moves towards the sky (second violation), and become invisible (third violation) but also omnipresent (breach of this violation).⁴⁶ I will not go into too much detail; it is sufficient to say that it is extremely counter-intuitive. A hypothesis emerging from that observation is that the ritualisation of the rosary happened in order to overcome the failure of the transmission potential.

Before concluding, I would like to call attention to a final point identified at the end of the first part of this essay. The analysis bias, or the impossibility to determine the choice of agents, was caused by a traditional use of the sources. We can suggest new potential answers by using the tools I have discussed in the second part. They are built on evolved cognitive capacities, and thus, have a panhuman character. They can, therefore, be applied without ethnocentrism or anachronism to the agents of the Middle Ages. From there, one can see that there is no such thing as a 'type' of devotee to Mary, but only choices made by individual agents. Those choices are partly due to cognitive processes that are universal and not conscious. More than a typical 'devotee to Mary of the Late Middle Ages', we should prefer to see an individual that has been in contact with ideas that are particularly attractive *by themselves*. What still needs to be determined is the form of this contact, a question that a more traditionally historical or sociological approach can answer.

⁴⁵ See Barrett 2008, *passim*.

⁴⁶ After encoding, the Assumption becomes: HUMAN^{b+u+(p)s}. That is, a human being that does not fulfill our expectations in terms of intuitive biology, of general consistency, and of intuitive physics. Moreover, the violation of intuitive physics is in itself breached by a violation of specialisation. The counter-intuitivity score is four points, which makes the concept of the Assumption an extremely counter-intuitive one.

In this essay, I identified two limits in the historical approach to the transmission of the rosary. First, we cannot answer comprehensively or satisfactorily the question: 'Why is the rosary so attractive?' The adaptation of tools taken from the cognitive study of religion offers answers to this question: the rosary is attractive due to a formal transformation, which can be described as a process of ritualisation. This ritualisation is facilitated by appending meditations with counter-intuitive content that make the rosary more attractive, that is, more prone to being transmitted and unconsciously fostering the attention of those praying. Second, some dogmas present in the meditation are too counter-intuitive to be easily transmitted, thus the transformation of the prayer into a ritual reduces the influence of these hindrances to transmission.

The attraction of the devotion is strengthened. This does not mean that other causes, traditionally explaining the success of the rosary are obsolete; it just means that some arguments for these traditional causes contain a bias that needs to be corrected. The biased use of the sources prevents us from answering the question of the attraction of the rosary, because there is no point in addressing an issue considered obvious. The identification of a universal and unconscious process can provide a new insight on choices that are otherwise difficult to explain. As this example of the devotion to the rosary at the end of the Middle Ages hopefully shows, the cognitive study of religion offers useful tools for historians.