THE MAGIC OF SCIENCE IN THE FRANKLIN'S TALE[1]

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Abstract: Medieval university education provided an individual not only with a profession, which would provide him with great esteem and prestige, but also with scientific knowledge, which was unattainable for laymen. Accordingly, a medieval clerk was regarded to be a privileged individual who was endowed with theoretical and scientific knowledge, which might seem magical to laymen as reflected in Chaucer's *The Franklin's Tale*. Although he is not one of the main characters, there is a clerk from Orleans, who is important for the working of the plot as much as the main characters of the tale. This clerk is the very person to help Aurelius clear the shore off the rocks in accordance with Dorigen's only condition for accepting Aurelius's love. The clerk, first, calculates the movements of the moon and tides, and then decides the proper hour to show Aurelius that the rocks have disappeared from the shore. At this point, the scientific knowledge of the university educated clerk about the high tide times is believed to be magical and a product of occult sciences by Aurelius and all the other uneducated people. In line with these, the aim of this article[2] is to discuss the scientific knowledge of the clerk in *The Franklin's Tale*, which seemed magical to lay people, who did not have the *magical* scientific knowledge of the clerk and to present the perceptions of magic and science in the late Middle Ages as reflected in *The Franklin's Tale*.

Key Words: Chaucer, *The Franklin's Tale*, Magic, Science, Clerk, Medieval University Education.

Toprak Sahibi'nin Hikâyesi'nde Bilimin Büyüsü

Özet: Ortaçağ üniversite eğitimi bir kişiyi, sadece kendisine saygı ve prestij getirecek olan bir meslek sahibi yapmakla kalmayıp, aynı zamanda bu kişiyi avam kimseler için ulaşılmaz olan bilimsel bilgi sahibi de yapmıştı. Bu sebeple, ortaçağ üniversite öğrencisi, Chaucer'ın *Toprak Sahibi'nin Hikâyesi* eserinde de yansıtıldığı gibi, avam kişilere büyülü gelen bilimsel bilgi ile donatılmış ayrıcalıklı bir kişi olarak görülmekteydi. Hikâyenin ana karakterlerinden biri olmamasına rağmen, hikâyenin

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işleyişi için ana karakterler kadar önemli olan Orleans'lı bir üniversiteli vardır. Dorigen'in Aurelius'un aşkını kabul etmek için tek şartı olan kıyıdaki kayaları yok etmesi için Aurelius'a yardım edecek kişi tam da bu öğrencidir. Üniversiteli, ilk olarak, ayın ve dalgaların hareketlerini, sonrasında ise Aurelius'a kayaların kıyıdan yok olduğunu göstermek için doğru saati hesaplar. Bu noktada, üniversite eğitimi almış olan bu öğrencinin dalgaların yükseldiği zamanlar hakkındaki bilimsel bilgisi Aurelius ve diğer tüm avam kişiler tarafından büyülü ve okült bilimlerin bir ürünü olarak görülür. Bu bağlamda, bu makalenin amacı, *Toprak Sahibi'nin Hikâyesi'ndeki büyülü* bilimsel bilgiye sahip olmayan avam kişilere büyülü görünen bilimsel bilgiyi tartışmak ve *Toprak Sahibi'nin Hikâyesi'nde* yansıtıldığı üzere Ortaçağ'daki büyü ve bilim algılarını sunmaktır.

Anahtar Kelimeler: Chaucer, *Toprak Sahibi'nin Hikâyesi*, Büyü, Bilim, Üniversite Öğrencisi, Ortaçağ Üniversite Eğitimi.

1. Introduction

Chaucer's *The Franklin's Tale* is a Breton lay, which is set in the pagan world of Brittany. Hence, from the outset, the Franklin's readers assume that the characters and the events are away from the fourteenth century world of the *Canterbury Tales* and thus reflect the values of faraway periods. However, if the depiction of the clerk of Orleans and his dealing with the astronomical calculations are analysed closely, it can be argued that they reflect the values of the university educated clerks of fourteenth century England, not those of pagan Brittany as it is suggested in the beginning of the tale. Accordingly, although *The Franklin's Tale* sets itself as a proper place for magic as a Breton lay (V (F) 709-715),[3] the depiction of the clerk of Orleans, who is very important for the construction of the plot in the tale, draws attention to the social status of clerks in late medieval England. In line with these, the aim of this article is first to problematise the depiction of the scientific knowledge in the guise of magic in Chaucer's *The Franklin's Tale* by comparing and contrasting the clerk of Orleans in the tale with the clerks of the fourteenth century. This comparative analysis will provide new opportunities to better understand the social status of clerks as educated people, who were endowed with theoretical and scientific knowledge at universities in the late Middle Ages, which was the main reason that differentiated them from laymen. In this way, the article will also present how medieval laymen regarded the scientific knowledge of clerks as magical, which will also reveal the medieval perceptions of science and magic, or rather, science as magic, as reflected in *The Franklin's Tale*.

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[3] Throughout the article, the references to Chaucer's *The Franklin's Tale* are from *The Riverside Chaucer* (2008), Ed. Larry D. Benson, 3rd ed., Oxford: Oxford University Press.

2. The Depiction of Clerks and Magic in *The Franklin's Tale*

The Breton lays are much shorter than romances and they are mainly clustered around emotions rather than actions. Although Marie de France's lays were popular in the twelfth century, the English version of the Breton lays became popular in the fourteenth century (Cooper, 2014: 27) and Chaucer's *The Franklin's Tale* is an example of these Breton lays. Actually, it has already been argued that Chaucer was influenced by Marie de France's lays in writing his lay (Bowlin, 2006: 49-50). Yet, in addition to the influence of Marie de France, it should also be noted that Chaucer was influenced by Boccaccio, since the source of *The Franklin's Tale* is Boccaccio's *Decameron* rather than a Celtic or Breton source (Saunders, 2010: 145). As a result, the tale stands out as an amalgam of Breton lays and a fourteenth century literary text, that is, Boccaccio's *Decameron*. In Boccaccio's version, a lover is to create a blossoming garden in order to gain the love of his lady through a magician. A similar pattern is also valid for *The Franklin's Tale*, in which Dorigen wants Aurelius to clear the shore off the rocks in order to return his love even if her main intent is to secure her husband's safe return. This reveals that although the Franklin presents himself as "a burel man" (V (F) 716), that is an unlearned man, he follows the contemporary literary trends. Thus, it can be claimed that the Franklin's claim that his tale is a Breton lay, is functional in providing an inherent place for magic in the tale. Moreover, as Saunders argues "[t]he magic of the *Franklin's Tale* is humanly contrived and deceptive, and its emphasis is not action and adventure but high-flown philosophy and idealism" (2004: 91). It is for this reason that the agent of the magic in the *Tale*, that is the Clerk of Orleans, has a crucial role in the tale.

The tale opens with the introduction of the setting, which is Armorica, Brittany (V (F) 729). Arveragus, the great knight of Kayrrud, and Dorigen, who is defined, in accordance with romance and courtly love tradition, as "oon the faireste under sonne," (V (F) 734) are in love and they get married. This happily married life is broken with Arveragus' leaving for chivalric duties to fight for name and fame in England for two years, which causes great sorrow in Dorigen. Dorigen's sorrow is relieved only through the consolation of her friends and Arveragus' letters to her. Upon the invitation of her friends, Dorigen goes out to walk around in their company watching the sailing ships and grieving for their not bringing her lord home. Then, the first reference to the most important objects to blur the line between science and magic in the tale, that is the rocks, comes. Dorigen starts questioning why God has created the black rocks, "this werk unreasonable" (V (F) 872), since "[t]her nys yfostred man, ne bryd, ne beest / It dooth no good, to my wit, but anoyeth" (V (F) 874-875). Yet, she says that "I woot wel clerkes wol seyn as hem leste / By argumentz, that al is for the beste" (V (F) 885-886), because she cannot understand the reason why they exist. However, she desires wholeheartedly "wolde God that alle thise rokkes

blake / Were sonken into helle for his sake!" (V (F) 891-892), since she thinks that these rocks might prevent her husband's arrival.

One day, while amusing themselves in a garden by dancing, playing chess and backgammon "[a]nd this was on the sixte morwe of May" (V (F) 906), that is the proper setting for courtly love, everybody has been dancing after the dinner except for Dorigen, who still mourns for her lord. Among the crowd, there is a young squire, "[o]on of the beste farynge man on lyve" (V (F) 932), who is "[y]ong, strong, right vertuous, and riche, and wys / And wel biloved, and holden in greet prys" (V (F) 933-934). This depiction reveals that this young squire has all the characteristic features of a knight-in-the-making, which is in accordance with the features of a courtly lover. This young squire, called Aurelius, has been secretly in love with Dorigen for two years and more. He has been composing lays about his unreturned love and grief (V (F) 935-959). That day, while speaking to Dorigen, he cannot help revealing his love (V (F) 972-978). Although Dorigen first says that "[n]e shal I nevere been untrewe wyf" (V (F) 984), then, she says that she would love Aurelius if he

> […] remoeve[s] alle the rokkes, stoon by stoon,
> That they ne lette ship ne boot to goon –
> I seye, whan ye han maad the coost so clene
> Of rokkes that ther nys no stoon ysene […]. (V (F) 993-996)

Although Cooper argues that this answer "is a euphemism for rejection, her synonym for 'never'," since it is an impossible task (2014: 157), as Astell suggests, speaking in this way, Dorigen "answers both a wifely 'no' and a courtly 'yes' to him [...] which is simultaneously a denial and a promise" (1996: 176). Since this task seems to be "inpossible" (V (F) 1009), Aurelius falls into great grief and prays Apollo and asks for his and his sister Lucina's intervention to clear the shore off the rocks as she "of the see is chief goddesse and queene" (V (F) 1046). He wants them to sustain high tides for two years by stabilising the position of the moon and the sun, which evokes the workings of "supernatural machinery" (Cooper, 2014: 141). However, although Aurelius' call for Apollo and Lucina sounds supernatural, it is necessary to note that he asks for something natural not magical, since he refers to the high tides. Yet, still, this contributes to the element of supernatural in the tale, because this is a call for divine intervention. Aurelius prays Apollo saying that "[a]s thyn herberwe chaungeth lowe or heighe" (V (F) 1035) so "[y]e may me helpen, save my lady, best" (V (F) 1042) and cries for help:

> Do this miracle, or do myn herte breste –
> That now next at this opposicion
> Which in the signe shal be of the Leon,

As preieth hire so greet a flood to brynge
That fyve fadme at the leeste it oversprynge
The hyeste rokke in Armorik Briteyne;
And lat this flood endure yeres tweyne. (V (F) 1056-1062)

Aurelius wants Lucina "to synken every rok adoun / Into hir owene dirke regioun / Under the ground, ther Pluto dwelleth inne" (V (F) 1073-75). Otherwise, he thinks that it is impossible for him to win Dorigen's affection. In the meantime, Arveragus returns home and Dorigen is very happy. Aurelius suffers for two years and more, and he has comfort only through his brother, who is a clerk. When this clerk brother is full of sorrow for Aurelius,

[h]e hym remembred that, upon a day,
At Orliens in studie a book he say
Of magyk natureel, which his felawe,
That was that tyme a bacheler of lawe,
Al were he ther to lerne another craft,
Hadde prively upon his desk ylaft;
Which book spak muchel of the operaciouns
Touchynge the eighte and twenty mansiouns
That longen to the moone, and swich folye
As in oure dayes is nat worth a flye –
For hooly chirches feith in oure bileve
Ne suffreth noon illusioun us to greve.
And whan this book was in his remembraunce,
Anon for joye his herte gan to daunce,
And to hymself he seyde pryvely;
 'My brother shal be warisshed hastily;
 For I am siker that ther be sciences
 By whiche men make diverse apparences,
 Swiche as thise subtile tregetoures pleye.
For ofte at feestes have I wel herd seye
That tregetours, withinne an halle large,
Have maad come in a water and a barge,
And in the halle rowen up and doun.
Somtyme hath semed come a grym leoun;
And sometyme floures sprynge as in a mede;
Somtyme a vyne, and grapes white and rede;
Somtyme a castel, al of lym and stoon;
And whan hem lyked, voyded it anon.
Thus semed it to every mannes sighte […]'. (V (F) 1123-1151)

These words reflect the general attitude of medieval people towards clerks and magic natural. At this point, the tale implies that it is the magic of a clerk that would influence the relationship between Dorigen and Aurelius. Thus, it

would be better to analyse the concept of magic in the Middle Ages before discussing the *magical* performance of the clerk of Orleans.

3. The Concept of Magic in the Middle Ages

The attitude towards magic changed throughout the Middle Ages. It was believed that there were mainly two types of magic, that is, natural magic and demonic magic. While natural magic was considered to be a part of science, since it was concerned about the occult powers in nature, demonic magic was regarded as the improper use of religion in human relations, which favoured the help of demons over the help of God (Kieckhefer, 1989: 9). Nevertheless, there was not still a consensus about the acceptance of natural magic. In fact, during the classical period, people attributed the word magic to the performances of the magi, who were the priests from Persia, to cure the sick through their occult knowledge and astrological practices. Although it was believed that there was the influence of help from their gods in these magical practices during the classical period, the change in this attitude started with the conversion to Christianity. The early Christians, on the one hand, asserted their receiving help from their gods, but on the other hand, they still condemned these practices as demonic divination practices that came through the help of pagan gods, not of the Christian god, which resulted in the condemnation of these divination activities as sinister and demonic. Hence, magic was associated by the learned clergy with paganism and heresy. As a result, its practice was prohibited and punished in the Christian world (Saunders, 2010: 65-77). However, it is also necessary to note that this condemnation was a result of the writings of the learned Christians and it is not possible to extend this to the commoners, who could not get the natural elements in magic. Rather, it can be argued that the commoners mostly regarded magic as natural while the learned people mainly regarded it as demonic and sinister. These negative attitudes towards magic began to change in the thirteenth century when natural magic was offered as an alternative for demonic magic. It was believed that natural magic dealt with the occult powers inherent in nature, which were the unknown and awe-arousing powers in nature. Therefore, it can be argued that if an action was a result of the occult powers in nature, it was regarded as natural magic. For instance, Thomas Aquinas argued that the stars and the planets had an influence on people through occult phenomena and this could be worked out through the study of astronomy. This comparatively positive attitude towards natural magic continued in the fourteenth and fifteenth centuries (Kieckhefer, 1989: 10-17).

Besides, the Arabic learning coming through the cultural interaction with Muslim Spain and southern Italy introduced the study of astronomy into the world of learning at universities, which had a great influence on the change in the concept of magic. Astronomy was an essential subject for the liberal arts at

universities and it included astrology, which was regarded as the sphere of magic. Furthermore, the Arabic works on astrology and alchemy had been translated from Arabic into Latin in the twelfth century. These works included information not only on astrology but also on astronomy. There was a lot of information about the astronomic tables to study the influence of the stars and the planets on people. Accordingly, it was mainly the learned people at universities, namely the clerks, who were educated in astronomy and astrology (Kieckhefer, 1989: 116-119; Saunders, 2010: 3-4, 105). This led to the emergence of the concept of *magician clerk* and *natural magic* practiced by these clerks at universities. This concept of natural magic, based on the classical arguments about the marvels of nature, became prevalent in the late Middle Ages and it was totally differentiated from magic. It was believed that the universe was "a single organism, ordered by a structure of natural forces and correspondences: what affected one part might affect the whole" (Saunders, 2010: 31). Likewise, St Isidore of Seville in *Etymologiae* "makes a crucial distinction between astronomy, the study of the actual movements of the heavens, and astrology, the study of the powers inherent in these" (Saunders, 2010: 100). Thus, the study of astronomy stood out as one of the important means of understanding the workings of this universal system and it was regarded as a branch of science, which meant that the concept of magic dovetailed into the concept of science.

4. The Perception of Science as Magic in the Middle Ages and in *The Franklin's Tale*

According to the *Middle English Dictionary*, science referred not only to "knowledge; information" ("science" (1a (a))), but also to "[l]earning; book-learning" ("science" (2 (a))). When this definition of science is combined with the concept of magic, especially natural magic in the Middle Ages, a very significant question arises: "[h]ow can we define the border between magic and science? Even if we want to say that there are instances that lie near or on the border, it seems that we must be able to define the border itself" (Kieckhefer, 1989: 8). Accordingly, the first impression about the clerk of Orleans in *The Franklin's Tale* seems to be standing at this border, which can be defined as a liminal space between magic and science. Similarly, the words of Aurelius' brother when he offers Aurelius to go to Orleans to find one of his clerk friends to help him remove the rocks off the shore through his *magic* are also significant to enhance this liminality (V (F) 1166-1170). He says that

> […] if I myghte
> At Orliens som oold felawe yfynde
> That hadde thise moones mansions in mynde,
> Or oother magyk natureel above,

He sholde wel make my brother han his love.
For with an apparence a clerk may make,
To mannes sighte, that alle the rokkes blake
Of Britaigne weren yvoyded everichon,
And shippes by the brynke comen and gon,
And in swich forme enduren a wowke or two.
Thanne were my brother warisshed of his wo;
Thanne moste she nedes holden hire biheste,
Or elles he shal shame hire atte leeste. (V (F) 1152-1164)

Aurelius and his brother leave for Orleans to find "this magician" (V (F) 1184) and meet a clerk, who greets them in Latin and tells them their intention to go there without their saying. Thus, the Franklin displays the magical potential of this clerk from his very first appearance onwards. Aurelius' brother asks him questions about his old friends, and he learns that they are all dead. Hence, they go to the house of this clerk, where "this maister that this magyk wroughte" (V (F) 1202) and shows Aurelius many apparitions: forests, parks, harts, deer, hunters, jousting knights, and his lady in a dance in which Aurelius himself also dances. This *illusion* performance influences Aurelius so much that they discuss immediately the fee of this master clerk for removing the rocks off the shore in Brittany. The clerk asks for a thousand pounds and Aurelius accepts the offer.

Next day, all three leave for Brittany, and now May is over and it is "[t]he colde, frosty seson of Decembre" (V (F) 1244) and the clerk immediately sets to work:

This subtil clerk swich routhe had of this man
That nyght and day he spedde hym that he kan
To wayten a tyme of his conclusioun;
This is to seye, to maken illusioun,
By swich an apparence or jogelrye --
I ne kan no termes of astrologye --
That she and every wight sholde wene and seye
That of Britaigne the rokkes were aweye,
Or ellis they were sonken under grounde.
So atte laste he hath his tyme yfounde
To maken his japes and his wrecchednesse
Of swich a supersticious cursednesse.
His tables Tolletanes forth he brought,
Ful wel corrected, ne ther lakked nought,
Neither his collect ne his expans yeeris,
Ne his rootes, ne his othere geeris,
As been his centris and his argumentz
And his proporcioneles convenientz

For his equacions in every thyng.
And by his eighte speere in his wirkyng
He knew ful wel how fer Alnath was shove
Fro the heed of thilke fixe Aries above,
That in the ninthe speere considered is;
Ful subtilly he kalkuled al this.
Whan he hadde founde his firste mansioun,
He knew the remenaunt by proporcioun,
And knew the arisyng of his moone weel,
And in whos face, and terme, and everydeel;
And knew ful weel the moones mansioun
Acordaunt to his operacioun,
And knew also his othere observaunces
For swiche illusiouns and swiche meschaunces
As hethen folk useden in thilke dayes.
For which no lenger maked he delayes,
But thurgh his magik, for a wyke or tweye,
It semed that alle the rokkes were aweye. (V (F) 1261-1296)

Due to this detailed depiction of the disappearance of rocks, the clerk of Orleans has been defined by the critics as a "clerk magician" (Knopp, 2004: 344) or a "magician-clerk" (Saunders, 2010: 146) who is "not a real magician but an illusionist" (Lee, 2010: 48), since his performance at the rocky shore does not call for demonic action but natural magic (Saunders, 2010: 152). Hence, the clerk of Orleans is even resembled to Shakespeare's Prospero, who is also a learned man practising natural magic (Saunders, 2010: 152, 262-264; Knopp, 2004: 337-354; Pearsall, 1985: 154). Similarly, it has been claimed that the clerk of Orleans and Prospero have similar ability to create "complex powers of magico-theatrical illusion" (Saunders, 2010: 262). Thus, it would be beneficial to have a look at the meaning of *magician* and *magic* as well. According to the *Middle English Dictionary*, magician means "[o]ne learned in the occult sciences" and a "sorcerer" ("magicien") while magic means "[t]he knowledge of hidden natural forces (e.g. magnetism, stellar influence), and the art of using these in calculating future events, curing disease, etc." ("maugik" (a)) as well as "sorcery, enchantment" ("maugik" (b)). Accordingly, the *Middle English Dictionary* lists *The Franklin's Tale* as a tale presenting an example for "sorcery" and "enchantment."

However, this long depiction of the clerk's calculations is simultaneously very functional in displaying his scientific method to calculate the motions of the sun and the moon and thus the high tide period, which is the reason underlying the disappearance of rocks despite its magical reception by all the other uneducated people in the tale. Actually, since magic is an important feature of Breton lays, the disappearance of rocks has always been regarded as a reflection of magic in *The Franklin's Tale* (Wood, 1970: 245). Likewise, this

scene received polyvocal comments from the critics. For instance, on the one hand, there are some critics who have regarded this scene as a result of pure magic (Tatlock, 1913: 339-350). On the other hand, there are some critics who have regarded this scene as a result of high tides (Robertson, 1962: 276). Combining these two arguments, there are also some critics, like Hodgson in her edition of *The Franklin's Tale* (1960: 132), who have argued that the disappearance of the rocks was because of the high tides caused by the magic of the clerk of Orleans. Thus, the high tide times and the medieval ways of calculating them also require a closer analysis.

As Wood states, it is known that the changing condition of the moon and the sun causes ebb and flow, and thus high and low tides two times a day (1970: 249). Accordingly, there happens a high and a low tide each day while there are two periods of high tides in each month, which occur during the full and the new moon. Similarly, in the Middle Ages, it was believed that the sun's declination when combined with the phase of the moon determined the equinoctial springs and the changing distance between the sun and the earth, combined with the phases of the moon, determined the high and the low tides. Yet, it was not that easy to guess when the high or low tides would occur. For instance, while Isidore of Seville argued that the tides were strongest not only at equinoxes but also at solstices, Bede listed three features of the possible annual tide periods: the strength of the tides got weaker from the equinoxes, to summer and to the winter, which is contrary to the depiction in *The Franklin's Tale*. Hence, according to Bede, four seasons were represented by the position of the sun at equinoxes and solstices. However, the commentaries on Aristotle, especially based on an anonymous treatise, *Tractatus de fluxu et refluxu maris*, written down in the thirteenth century clarified the annual high and low tide periods through observations in England and France. According to *Tractatus*, the high tide occurred in winter, which also supports the appearance of high tides during winter in *The Franklin's Tale*. Later on, this claim was also supported by some other commentators of Aristotle's *Meteorologica* such as John Buridan, Thimonus Judei, the pseudo-Duns Scotus and Paulus Venetus (Wood, 1970: 250-256). All these required that clerks needed to be educated in astronomy and astrology to calculate these times.

At medieval universities, students in the arts were responsible for astronomy courses. Moreover, the interest in astronomy and astronomical symbols disseminated to the daily lives of the commoners, in that, church clocks and other mechanical instruments drew the commoners' attention to astronomy as well (North, 2013: 456). The aim of astronomy at universities was to provide students with the working knowledge of the spheres and the universe through observation. Students also learned geometrical models, which made it easier to understand the planetary motion. At this point, especially the writings of Aristotle and Ptolemy were of great interest (North, 2013: 457-458). Such

astronomical knowledge was not something unfamiliar to Chaucer, the poet of the *Treatise on Astrolabe*.

Besides, from the eleventh century onwards, there was an increasing influence of the Arabic treatises on the study of astronomy, which came through the translations of these in Spain as mentioned above. Among these treatises, there were three treatises on three important astronomical instruments: the astrolabe, the sphere and the equatorium (North, 2013: 459). Additionally, there were astronomical tables, the most important of which was the Toledan tables. The Toledan tables were actually very popular until the fourteenth century when they were replaced by the Alfosine tables. Such kind of tables and instruments were functional in calculating the planetary motions and they were used at universities for demonstration as well (North, 2013: 460-470). In this respect, the reference to Toledan tables by the clerk of Orleans makes it clearer that the world of *The Franklin's Tale* is not the pagan world of Brittany but fourteenth century England.

In relation to the calculations of the clerk of Orleans, Osborn suggests that he makes use of horary astrology, which is a form of weather astrology, and so the Franklin's use of technical astronomical terminology is just functional in revealing Chaucer's teasing his audience, who regards the moon's influence on the tides as *magical*. It is for this reason that the illusion show in the house of the clerk in Orleans is just functional in creating an illusion. Furthermore, the suggestion that the rocks have been covered by the high tides is also in accordance with the high tides at the coast of Brittany during December 1340 (2002: 199-201). It can be suggested that "Chaucer is then able through his illusionist clerk to create the illusion of an illusion; though the date may be off by about a thousand years in terms of the tale of ancient 'Armorica,' in the Brittany of Chaucer's lifetime these tides are real" (Osborn, 2002: 201). Thus, this can also be regarded as a reflection of the amalgam of pagan Brittany and fourteenth century England as well as the amalgam of magic and science.

Similarly, as Knopp also argues, "[t]he Franklin himself attributes the clerk's feat entirely to science or pseudo-science" as reflected by the detailed depiction of his astrological calculations creating a magical atmosphere (2004: 341). However, it is interesting that, despite the detailed depiction of the astronomical calculations, "the Franklin undercuts all rational explanation in the end by reducing everything to 'illusioun' […] [which] sabotages the very event his story needs to make […] work" (Knopp, 2004: 341). Hence, Knopp claims that these show the Franklin's "contempt for magic as sham" (2004: 341). However, it can be claimed that this is in fact the reflection of the attitudes of an uneducated man to science as well as the attitudes of a Christian man, who condemns magic. In this respect, the attitude of the *uneducated* Franklin towards the disappearance rocks can be equated to that of the *uneducated*

Aurelius. The words the Franklin uses to describe the scene display his attitude. He refers to the scene as an "illusioun" (V (F) 1264), an "apparence or jogelrye" (V (F) 1265), a "supersticious cursednesse" (V (F) 1272), an example of "meschaunces / As hethen folk useden in thilke dayes" (V (F) 1292–93). As a result, it is very natural for him to state that "thurgh his magik, for a wyke or tweye, / It semed that alle the rokkes were aweye" (V (F) 1295–96). All these show that the *uneducated* Franklin totally believes that the disappearance of the rocks is magical. This is very much like the attitude of the *uneducated* Aurelius himself, who not only believes that this is magical, but also attributes great reverence to the clerk's natural magic. This reveals that Aurelius cannot understand the workings of the clerk's scientific knowledge about the high tide times. Actually, Aurelius's lacking such scientific knowledge has already been revealed when he asks for high tides either in July or August (V (F) 1056-1062). Yet, contrary to his expectations, the tide comes *naturally* not in summer but in winter. Hence, this can also be regarded as a reflection of the fact that Chaucer might be laughing at Aurelius' lacking information about the high tide times (Wood, 1970: 249-250).

In the same line, the first reactions of the characters when they hear the disappearance of the rocks are also very significant. When Aurelius sees that the rocks have disappeared, he immediately goes to Dorigen thanking Venus for her help and asks Dorigen to keep her promise (V (F) 1301-1338). Dorigen is astonished, since she thinks that this is impossible:

> Allas […] that evere this sholde happe!
> For wende I nevere by possibilitee
> That swich a monstre or merveille myghte be!
> It is agayns the proces of nature. (V (F) 1342-1345)

Yet, without any need to check the truth of what Aurelius has said, Dorigen directly returns home and cries for days long complaining at her Fortune. What is interesting in the attitudes of Aurelius and Dorigen against the disappearing rocks is that "wonder at the marvel is entirely absent" (Cooper, 2014: 158). As Saunders states, "there is not even a question of verifying the disappearance of the rocks" (2004: 93). Interestingly enough, "the reported success" of the clerk's performance is enough to influence the lives of these *uneducated* people (Kieckhefer, 1989: 109). This can, on the one hand, be accepted as an indication of the idea that magic is an essential feature of the Breton lays (Saunders, 2010: 4). On the other hand, it can be claimed that everybody regards this as *naturally magical*, which can be accepted as the reflection of the laymen's perception of science as magic that cannot be questioned as it is a part of the unnatural.

5. Conclusion

Chaucer plays with the medieval concepts of magic and science in *The Franklin's Tale* to display the liminality of these concepts in the medieval mind. Accordingly, although he sets *The Franklin's Tale* in pagan Brittany and presents the astronomical calculations of the clerk of Orleans under *magical* veil, Chaucer actually aims at displaying the *scientific knowledge* of the fourteenth century clerks that seemed *magical* to the *uneducated people*, which created great reverence for the clerks. Hence, it can be suggested that Chaucer's *The Franklin's Tale* presents the perception of the scientific knowledge of educated clerks as magical by uneducated laymen in the late medieval society, which displays the liminality of the concepts of magic and science in medieval thought.

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