

# **Patrick Stewart**

Yeast: A Religious History

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## **Abstract**

*Yeast: A Religious History*, delves into the idea that societal changes can arise from the smallest, most unlikely of places. Beginning with an exploration into what exactly yeast is and how it is used in bread, this article discusses how such a small microbe had such a huge impact on religion. The first mark of religious yeast is with the Jewish faith, where unleavened bread is the staple to a pious life. Later, Romans would use bread in religious celebrations and offerings. Eventually barbaric leavens were incorporated by the rising faith of Christianity. Leavened bread eventually became the bread of Christian Europe, rather than the Church, and was a symbol of Europeans during the Crusades. As with many ideas of faith, the Enlightenment began to remove the mysticism from yeast, and with the turn of the 20th century, the idea of religious yeast was all but dead. While artisanal breads have renewed interest in yeast today, the fervor behind it is gone.

## Introduction: From Textbooks to Bakeries

History is often judged on a large scale. We track the rise and fall of kingdoms, observe the effects of major catastrophes, and admire great shows of wealth. However, even in these wider trends, smaller, more subtle transitions occur. The word *religion*, for example, tends to evoke scenes of temples and churches, and priests performing all manner of formal religious procedures. Yet religious trends also occur in smaller more unlikely settings, such as bakeries. Here, religion takes place not only on the practical, visible level, but also on a microscopic level.

Yeast has had great influence over civilization, and it is therefore instrumental to look at the domestication and spread of grains. Poaceae, or grains, are grasses that are digestible by human beings. Grains were first domesticated somewhere in the Fertile Crescent around 9000 B.C.E.,<sup>1</sup> when they were modified to prevent the seeds from spreading to the winds. The majority of these grains contain gluten, a protein that enables dough to be elastic. More importantly, grains contain sugars, which are the primary food source for a certain kind of fungus.

*Saccharomyces cerevisiae*, also known as both baker's and brewer's yeast depending on the strain, metabolizes sugar for energy, creating a byproduct of alcohol and carbon dioxide. The rate of this conversion depends on the strain, but is usually one glucose sugar per two molecules of alcohol and two molecules of carbon dioxide.<sup>2</sup> Wild yeast of this variety can be found everywhere, and is normally found on the skins of grapes.<sup>3</sup> The foam at the top of many alcoholic products, also known as barm, was used to incorporate the yeast into bread as a leavening agent.

The difference in these two products, booze and bread, is their constitution. In wine and other alcoholic beverages, the carbon dioxide escapes during fermentation, leaving only the alcohol and flavoring behind. In bread, the gluten in the dough traps both, expelling them as heat is applied.<sup>4</sup> As it does so, the carbon dioxide forces tiny bubbles in the dough to expand, weakening the "network of gluten and starch granules."<sup>5</sup> The end result is a light and soft bread that is finer, more tender, and easier to digest. This is due in large part to the yeast and other bacteria pre-digesting the bread before it is consumed by people.<sup>6</sup>

The act of leavening bread and the results it induces on grains is what leads to some grains being regarded more highly. Sorghum, rice, and other grains that lack gluten do not rise as easily, making them ill-suited to leavens. This lack of a gluten sheet makes the resulting breads denser than wheat varieties. Lighter grains were considered cleaner compared to their darker

cousins, as more of the impurities could be removed.<sup>7</sup> It is these two components, color and elasticity, that makes wheat the grain of the elite in many civilizations, while inferior grains such as millet and barley were relegated to the peasantry, or even animals. This was the case in Mediterranean cultures, including Hellenistic and early Middle Eastern civilizations. Other parts of the world (China and Japan for example) favored rice over leavenable grains.

## **Bread in the Cradle: Leavening in Egypt and the Fertile Crescent**

Bread originates from very early periods in human history.<sup>8</sup> In fact, a site was discovered in Jordan with bread that dates back 14,000 years ago.<sup>9</sup> Judging from the porous surface, it is possible that the bread was leavened, but it is unconfirmed whether or not yeast was involved.

The Neolithic was also the period in which the first sourdough starters might have been developed. Starters of this kind are leavens that involve mixing a dough together over several days before adding a portion of the starter to the bread dough. Because the microorganisms that cause the bread to rise in this case are not usually yeast, (lactobacilli being one such example) the flavor often results in a sour taste. This method would be the primary means of leavening until yeast became domesticated.

The process of leavening spread across the Levant and into the Middle East. Mesopotamia immortalizes this in the Epic of Gilgamesh on Tablet XI.<sup>12</sup> The bread that he describes is much more decayed than any unleavened bread would be, indicating that it is most likely leavened. At the time of the story, bread was a mark of civilized folk; the story indicates that wild man Enkidu becomes civilized when he is able to make bread.<sup>13</sup>

Yeast was officially domesticated around 1500 B.C.E. in Egypt. Although, it is still unclear exactly how the Egyptians first domesticated yeast, some bakery models from the period provide clues. The model from the Tomb of Meketre shows a sort of assembly line, where dough would travel from one station to the next. Several of these stations appear to be made out of stone, which indicates they had multiple uses, possibly over multiple lifetimes. As yeast can live in a dormant state for roughly six months, and in an active state for two to three weeks, it is likely there was some left on the tools after each bread production. Additionally, each yeast cell can have anywhere between twenty to thirty daughters,<sup>14</sup> ensuring an increased population of cells.

Beer appears at almost the same time as leavened bread, and is just as important in the discussion of such bread. Alcohol provided a way for

people to have access to a cleaner beverage. The alcohol produced by yeast is caustic to other microorganisms and, in large enough quantities, even the yeast itself. This caused many disease-causing bacteria and parasites to be killed off before it was ingested.

With the production of beer came barm, which acted as a leavening agent for bread in a few places in the world, including Mesopotamia, Gaul (modern-day France), and eventually all of Europe during the Middle Ages. Because of this, leavened bread tends to appear in higher numbers after beer begins appearing. Each of these products also are time reliant. The shortest period of time it takes to manufacture beer is around two weeks. Leavening can take several hours to allow the bread to rise before it is baked.

The time it took to make both alcohol and leavened bread gave the products an inherent value. This value transitions into what it takes to purchase such a product, or on some occasions what can be purchased with it. In fact, the earliest recorded forms of organized pay was in both beer<sup>15</sup> and bread,<sup>16</sup> showing the beginnings of yeast's growing power. This rise in yeast's influence cannot be considered solely in a secular context. In Egypt, the head of state, the pharaoh, was seen as a living god, while in Mesopotamia, kings had specific religious duties and ruled by divine right.

## **Early Monotheism: Zoroastrianism and Judaism**

Around the time of the priest-kings of Egypt and Mesopotamia, monotheistic religions of the area had their own interpretation of holy bread. Judaism, founded c. 1812 B.C.E., was one of the world's first recorded monotheistic religions. Their idea of sacredness came from purity and wholeness, particularly in a social context. Mary Douglas, a 20th century anthropologist, hypothesized that many Jewish dietary restrictions, while having a practical base, were formulated on the grounds of religious cleanliness.<sup>17</sup> In early Judaeism, fermented foods "corrupted" the original substance, making it inferior to the pure product.<sup>18</sup> Because of this, leavened bread had a lesser station in the religious hierarchy, especially in comparison to matzo, an unleavened bread eaten during Passover. During that celebration, unleavened bread was eaten as a "sign of sadness."<sup>19</sup>

This dietary restriction was normally only during the period of Passover, so yeast-filled breads were still enjoyed at other times. Leavened bread also served a very particular religious function during the Feast of the Firstfruits.<sup>20</sup> Here, offerings were made to God by way of the priests, and were usually composed of the first of the harvest.

The religion of Persia during the Achaemenid Empire was Zoroastrianism, which was similar to Judaism with regards to holy bread. Dron was a ritual bread used in religious offerings, made clean and pure in all ways: from the quality of the pure wheat flour, to the cleanliness of the water, to even the removal of leaven.<sup>21</sup> However, the prohibition against yeast in religious ceremonies did not extend to common consumption of bread. There are over thirty different varieties of “ethnic and traditional bread,” in Persia and Iranian cuisine.<sup>22</sup> The similarities between Judaism and Zoroastrianism are very clear. Both distinguished unleavened products as pious, and deemed fermented products to be profane.

## **Orphic and Chthonic Figures: Bread and the Greek Underworld**

While Persia relegated leavened bread to the profane world, the Greek conception of yeast appears to have revolved around chthonic figures, or entities closely associated with the underworld. Again, the two products that use yeast are bread and alcohol. In Greece, each of these products had a god associated with them: Demeter and Dionysus. When examining Demeter, one need look no further than her connection with the Eleusinian Mysteries, an agrarian cult that treated her connection to Persephone, and by proxy Hades, as part of cycle of death and rebirth.<sup>23</sup> Dionysus has his connection through his cult from Mycenaean Greece. Here, he is shown to be a god of death and rebirth, and it was said that by drinking wine, one could tap into some aspect of his divine power.<sup>24</sup> Interestingly, the converting of grapes into wine also carried symbolic elements of the transformative rebirth Dionysus was supposed to have undergone.

The association of yeast with death and rebirth may have contributed to a stigma against leavened bread, which was not widely consumed in Greece. While a pragmatic explanation for this is that leavening bread took more time and better ingredients, making it more expensive,<sup>25</sup> it is also likely that the chthonic connection drove people away from consuming it. By the time Hellenistic Greece entered the scene, underworld gods such as Hades were treated with fearful respect. Their attention would not be invited if it could be helped, for fear of hastening one’s own demise. Therefore, eating bread associated with chthonic travel to the underworld may have been seen as unwise. Solon, the Athenian lawgiver, forbade the consumption of leavened bread outside of feast days, which were often considered sacred.<sup>26</sup> This is evidence of a clear distinction between (profane) flatbreads and (revered) leavened ones.

If leavened bread is found to be the example of sanctified moderation, wine was the example of worship in excess. Marginalized groups, such as slaves, women, and the lower class, joined the Cult of Dionysus which incorporated alcohol in its ceremonies because drunkenness dissolved social boundaries. The aristocracy then reinvented the cult over several hundred years by diminishing associations between alcohol and Dionysus' attributes of madness and viciousness. Instead, these were replaced with parties and the harmless drunk. After this, Dionysus was adopted into the major pantheon, making the faith of alcohol a public tradition.

## **Yeast in the Roman State and Norse Countries**

The Romans would inherit much from their Greek counterparts, including religion. While stylistically they were the same, they differed in practical application. One example of this is the mentality of religious followers. In Greece, adherence to and belief in the gods was not only condoned, in some cases it was required. One of the crimes leveled against Socrates was promoting impiety.<sup>27</sup> Romans viewed worship, especially during festivals, as a public obligation.<sup>28</sup> In fact the Latin word *religio*, refers not to the gods or faith, but to piety and superstition. In other words, it was viewed as better to perform the proper rituals when the gods don't exist, than to fail to meet these obligations in case they do.

Because of the differences between both the Greek and Roman religious systems, the cult of bread was divided in two directions: one that flourishes within secular powers, and the other that slows in religious circles. In the secular case, bread was divided into a symbol of both political clout and medicinal treatment. In medicine, the second century author and physician Galen prescribed different levels of leaven depending on an individual's daily routine. For example, athletes were to eat only slightly leavened bread, while ordinary people who were not training and the elderly could eat more heavily leavened breads.<sup>29</sup> Additionally, unleavened breads were unfit for everyone, except maybe animals.

Regardless of the variety, bread was still the staple in many Roman diets. Because of this, control of bread and grain supplies became of major concern in the political spectrum. Both the Senate and several emperors instituted dozens of reforms to feed the masses, including making the people of Rome eligible for free grain in a system known as the *annona*. At first this system gave city dwellers the means to make bread, but otherwise left them autonomous. That changed with Emperor Aurelian, who changed the dole to include premade bread,<sup>30</sup> increasing the dole's overall value and saving citizens time in production. In addition, Aurelian standardized the



minimum size of bread that could be sold.<sup>31</sup> These two outwardly minor reforms changed much, as the State was taking a role in defining what bread was. In the *annona*, the State choose how much grain was used, what the bread was cooked in, and how much yeast was used. The bread resulting from Aurelian's reforms became the standard by which all bread was judged.

Finally, in the sphere of religion, there are two things of note. First, the Ancient Roman priests of Jupiter were not allowed to touch fermented bread.<sup>32</sup> Second, bread had major ties to the Temple of Vesta and the Vestal Virgins. Vesta, as goddess of the hearth, was in charge of those who baked bread for the family, making the Vestal Virgins, her priestesses, the matrons of the city and bakers of the empire. This connection was seen in the *mola salsa*, a type of ground meal the vestals would make to be sacrificed, or used in conjunction with other offerings.<sup>33</sup> Through *mola salsa*, grain was used in every major religious festival in the city of Rome.

For the priests of Jupiter, the prohibition of yeast may have been an exception, rather than an organized belief in yeast's uncleanness. No other priests have this restriction, and it may have been related to aspects of Jupiter himself in connection to yeast. One idea could be that the restriction was a holdover from the Mycenaean period. Jupiter, as a sky god, would have no want or need of something with chthonic aspects, such as yeast. So it could be said that yeast neither lost nor gained any significant presence in religion during the Roman Empire.

Although there is no specific evidence for or against yeast's sacredness, there are clues. For instance, the Arch of Titus shows a shew table being carried off with other temple treasures. Instead of treasure, chests, or gold, the Arch depicts the table upon which bread was offered to God.<sup>34</sup> This shows that while they may not be Jewish, the Romans understood the value of objects involved in the worship of bread. What is also interesting is that Galen prescribed that unleavened bread was unfit for everyone. If this were true, it would be unseemly to offer the gods things that were seen as inadequate for people to eat as well. Many ideas of Graeco-Roman offerings were based on the idea of sacrificing what was best, not that which was substandard.

The Abrahamic and Hellenistic worlds were not the only ones involved in making yeast sacred. Germanic and Slavic traditions were also involved, and both practiced leavening in some instances. These instances did not necessarily hold religious connotations, but were spiritually driven nonetheless. For example, the Slavic bread and salt ceremony involves *korovai*, a heavily leavened bread, and was seen as magical.<sup>35</sup> Germans, both in Germany proper and in Northern Europe, used barm from their beer

production to craft their bread. This bread also undergoes purification rituals, including the æcerbot, a process by which grain fields were cleansed when they yielded poorly.<sup>36</sup> Unlike the stricter uses of yeast found in Abrahamic or Jewish traditions, Northern and Eastern Europeans had no qualms about the use of yeast in their bread products. Rather they hold yeast in high regard, treating it as a pure object, rather than a representation of sin.

## **The Body of Christ: Yeast and Christianity**

With the beginnings of Christendom, sacred yeast and leavened bread was suddenly on the rise. Christians used fermented bread to disassociate themselves with Jewish matzo. In fact, barbarian bread traditions may have influenced the earlier trends of the Church, particularly in their attempts to distance themselves from what Christians of the time considered to be Jewish heretics and Roman oppressors. However, the Roman Catholics returned to the use of unleavened wafers for communion, citing several specific passages from the Gospel of Matthew for this.<sup>37</sup> St. Augustine referred to men as the “bread of God” and encouraged them to cultivate their lives properly as one would in the making of bread.<sup>38</sup> In Augustine’s opinion, the only way to cultivate body, soul, and bread was through the removal of yeast, both figuratively and literally. Therefore, removing yeast symbolized removing sin from one’s life.

The Catholics’ return to unleavened bread struck a chord with traditionalists in the growing faith. After all, both the Body and Blood of Christ used yeast, and yeast was seen as fundamental in the production of a God made flesh. In 1054 C.E., the Eastern Orthodox Church broke away from the Catholic Church. While they had many reasons, they specifically mention three: the Primacy of Peter, the inclusion of the Holy Ghost, and the leavening of bread.<sup>39</sup> That the use of yeast in one’s bread is such an important statement that an entire group of people were willing to break away from a religious faith illustrates how integral yeast was to the religious practice.

## **The Libels: Christian Accusations Against Jewish Bread**

The Gospel of Matthew was also interpreted by medieval Christian theologians as the Jews confessing to the crime of crucifying Christ.<sup>40</sup> The Gospel of John also claims several times that Jewish people desired to kill Christ.<sup>41</sup> Even Martin Luther, who was regarded as sympathetic to Jews in his earlier life, wrote a treatise in which he claimed, “You could not learn anything from them [the Jews], except how to disobey the commandments.”<sup>42</sup>

Through these misinterpretations of the text and blatant anti-semitism, “the Jew” became something of a boogeyman — wicked and evil. As such, many grand conspiracies emerged asserting that Jews were slowly undermining Christian values and ways of life. Among them was the blood libel — the accusation that Jews would kidnap Christian children to use them in gory rituals. These rituals included, but were not limited to, recreating the Crucifixion or making matzo crackers out of the children’s blood (though the latter probably only emerged in the 19<sup>th</sup> century). This was exemplified in the Tiszaeszlár affair, an accusation that the Jewish community in Tiszaeszlár murdered and beheaded a young girl in order to use her blood.<sup>43</sup> It is a flawed notion in part because kosher law prohibits the consumption of blood.

Accusations were also made about the bread of the Eucharist to Catholics, the eucharist becomes the sacred body of Christ through transubstantiation. As such, any act made that was not respectful to the communion wafer was considered a damnable offense since this would profane Christ himself. Catholics claimed that Jews would break into churches to steal the eucharist, later burning or stabbing the bread,<sup>44</sup> in effect torturing Christ’s body. The irony of this claim is that both the matzo and eucharist were in large part the same product. Both were unleavened bread for the purposes of being symbolically free of sin. It is interesting to consider then what makes the two distinct for Europeans of the period.

## **From Churches to Mosques: Bread during the Crusades**

Islam was in its Classical Period during this time. The debate by the disciples of Mohammed over whether or not leavened bread is halal or haraam (permitted or forbidden respectively), is one that had been argued since the founding. Some argued that bread using yeast still maintained around 35% alcohol content, and was therefore haraam.<sup>45</sup> Others claimed that bread, leavened or otherwise, was incapable of intoxicating those who ingested it and was therefore perfectly acceptable to consume.<sup>46</sup> This argument led to a few references from the Classical Period as to whether or not yeast was commonly used in bread. One mention of a “well leavened” grain product refers to a kind of stuffing used in *tharid*, a sort of soup.<sup>47</sup> Other than *tharid*, leavened bread is rarely mentioned, and while some yeast-ridden bread may have been present at the time, it is unlikely to have been a mainstay of the diet.

By the start of the Crusades, the Umayyad Caliphate had expanded through North Africa and into Spain, cutting off the southern Mediterranean from the rest of Europe. Given religious prohibitions, wine and yeast-filled bread were no longer the cultural foods of the Mediterranean, but of Chris-

tian Europe instead. In 1095 C.E., many crusaders demonized the bread of their enemies, calling it “poorly cooked flatbread [...] that hardly deserve the name bread.”<sup>48</sup> Armed with yeast-filled products, they charged into the Holy Land for glory, gold and faith.

## **Non-Western Cultures: Yeast in Asia, Australia, and the Americas**

In non-Western parts of the world, leavened bread tends to be scarce. The leavened products of Northern China, are used as both an offering in folklore origin,<sup>49</sup> and as a medicine for those suffering from indigestion and diarrhea.<sup>50</sup> In North America, the Zuni tribe are described as using “lime-yeast” to leaven their bread products.<sup>51</sup> With very few exceptions, though, ceremonial uses of yeast remain a largely Western concern.

Other parts of the world do not have as rich a tradition when it comes to leavened bread until after European contact. This is likely due to the lack of leavenable grains, or preference for other grains, such as rice. However, yeast is clearly religious in another medium: alcohol. Saké, which is often called a Japanese rice wine, and chicha, a South American corn beer, are two such examples. Early productions of both beverages were produced via communal spitting. Women would gather around a pot and chew either rice or corn, before spitting it into a large pot.<sup>52, 53</sup> This process forged a sense of community, because after fermentation there is a product that has some of everyone in it, both figuratively and literally. In modern Japan, in fact, there is a sense of competitiveness when it comes to whose province has a better saké.<sup>54</sup> From the religious angle, both saké and chicha were considered ritualistically pure. In fact, saké is still used in Shinto purification rituals in Japan.<sup>55</sup> Chicha on the other hand, had strong ties to the Peruvian gods, and was featured in religious offerings.<sup>56</sup> It is possible that the reverence arose from worship of the community, and that spirits (or yeast) would only come if everyone involved participated in the production within the traditional parameters.

It was widely believed that the Australian aborigines did not use yeast at all, whether to leaven their bread or to produce alcohol. However, recent research has revealed that aborigines may have produced a form of alcohol precontact. This brew would have been produced by fermenting sap from eucalyptus trees.<sup>57</sup> The precise cultural function is not yet known, and was possibly lost after European colonization. It is enough to know that yeast was being used there independent of the Western narrative.

## From Secular to Artisanal: Leavening Practices in the Modern Age

The idea of religious yeast maintained strength in the Renaissance, but began to slowly degrade after the Enlightenment (as did many ideas of faith). By the mid-19<sup>th</sup> century, the rise of secularism and industrialization drove bread production to become focused on preservation rather than taste or texture. The irony cannot be lost on how the primary ingredient removed for this to occur is yeast, the most religious inclusion. Microbes damaged the structural integrity and consumed portions of the bread, pre-digesting it for us; yeast bread degrades much more quickly than matzo crackers or hardtack, a sea biscuit developed in the 1500's that can be stored for up to ten years.<sup>58</sup> The push for industrial bread can also be seen in literature of the period. In Dickens' *A Christmas Carol*, the Ghost of Christmas Present heavily criticized the Church for closing bakeries on the Sabbath.<sup>59</sup> Here, priests are shown as barriers to progress, directly responsible for the hunger of the masses.

The sacrifice of yeast in the name of progress was more readily accepted in America, where secularism was the mainstay, as opposed to nations such as France and Italy, where buying fresh bread everyday was not just tradition, it was a way of life.<sup>60</sup> Even when leavening bread returned to popularity, Americans had begun leavening it with artificial compounds such as baking powder or baking soda.<sup>61</sup> The focus on preservation assisted with this transition, as now it was possible to store leavens for months, or even years, in small, evenly portioned packets.

In the 1960's there was a sudden resurgence in whole wheat bread in America, due in large part to the counterculture "hippie" movement. This revolution was sparked by a resistance to established American ideals. Included in this was pure white, genetically altered, sifted wheat bread. This made whole wheat unappealing, as the loaves were little better than bricks. With the assistance of a Zen Buddhist monk named Edward Espe Brown, the whole wheat movement finally received traction.<sup>62</sup> Whole grains are typically harder to leaven and bake due to impurities absorbing moisture, often making the final product either dense or crumbly. With Brown's contribution, brown breads and artisanal breads become much more viable.

## Conclusion: What Yeast Means Today

In the 21<sup>st</sup> century, bread is experiencing the beginnings of a yeast renaissance. More and more home cooks and bakery businesses are returning to traditional methods of preparing bread and using yeast.<sup>63</sup> Even organic

farming has marked a rise in microbes, both in decomposing fungi and yeast.<sup>64</sup>, <sup>65</sup> However, this movement is largely secular since Americans produced commercial yeast as early as 1868.<sup>66</sup> This secularization comes in the face of attacks against bread. In fact, bread sales have dropped by 11% as of 2013,<sup>67</sup> due in large part to increasing suspicion in bread's nutritional value.<sup>68</sup>

That is not to say, however, that the modern movements are completely devoid of what could be seen as religious fervor associated with yeast. Fad diets are the latest to ask whether bread should be leavened or not, and in some cases eaten. These diets are stringently followed by some, to blind devotion in rare cases. Even the old religions of the past are still debating the question of bread. Islam has yet to come to a consensus on what is halal or haraam with regard to yeast. In the Catholic church in 2008, there was a well documented incident involving a University of Minnesota professor desecrating the host to the the ire of many Catholics who still hold the bread in esteem.

The sacred associations with yeast were lost in large part due to industrialization, and it is a long road to reacquire them. Yeast has played a striking role religious history, from prohibitions to sacred rites, and from warring bands to clerical disputes. Yeast is by far the most important ingredient in modern bread-baking. Even if it is not the most popular ingredient, it is a critical component in religious practice throughout history.

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