



## Pig Xenotransplantation in the Qur'an: Application of Jasser Auda's Theory of *Maqāṣid al-Sharī'ah*

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**Abstract:** *This research discusses the interpretation of pig xenotransplantation in the Qur'an according to the commentators and according to the theory of maqāṣid al-sharī'ah by Jasser Auda. This research uses a type of library research which is presented using a qualitative research model with descriptive method. The results of the research show that the interpreters have different opinions regarding the prohibition of pork in the context of consumption (eating) alone or the prohibition of pork in all forms of use. Quraish Shihab is an interpreter who allows pig xenotransplantation. Based on the application of Jasser Auda's theory of maqāṣid al-sharī'ah theory, it was found that the systems approach containing six features, can be contextualized in analyzing the problem of pig xenotransplantation. In this case, pig xenotransplantation is permitted because of the urgency justified by sharia (ḍarurah shar'iyah), for which is the last alternative in efforts to preserve lives. Accordingly, although both of the results allow pig xenotransplantation, in this research it is explained how the steps or approaches were used to conclude the permissibility of pig xenotransplantation.*

**Keywords:** *Pig Xenotransplantation; Maqāṣid al-Sharī'ah; Jasser Auda.*

**Abstrak:** *Penelitian ini membahas tentang penafsiran xenotransplantasi babi dalam al-Qur'an menurut para mufasir dan menurut teori maqāṣid al-sharī'ah Jasser Auda. Adapun penelitian ini menggunakan jenis penelitian kepustakaan yang disajikan menggunakan model penelitian kualitatif dengan metode deskriptif. Hasil penelitian menunjukkan bahwa para mufasir berbeda pendapat terkait keharaman babi dalam konteks konsumsi (memakan) semata atau keharaman babi dalam segala macam bentuk pemanfaatan. Quraish Shihab merupakan mufasir yang memperbolehkan xenotransplantasi babi. Adapun berdasarkan pengaplikasian teori maqāṣid al-sharī'ah Jasser Auda, didapatkan bahwa pendekatan sistem, yang mana memuat enam fitur, dapat dikontekstualisasikan dalam menganalisis persoalan xenotransplantasi babi. Dalam hal ini, xenotransplantasi babi diperbolehkan karena adanya urgensi yang dibenarkan secara syariat (ḍarurah shar'iyah), yang mana menjadi alternatif terakhir dalam upaya penyelamatan nyawa. Dengan demikian, sekalipun hasilnya sama-sama memperbolehkan xenotransplantasi babi, tetapi dalam penelitian ini dijelaskan bagaimana langkah-langkah atau pendekatan yang digunakan sehingga sampai pada kesimpulan akan kebolehan xenotransplantasi babi.*

**Kata Kunci:** *Xenotransplantasi Babi; Maqāṣid al-Sharī'ah; Jasser Auda.*

## Introduction

The advancement of an era can be identified with progress in the scientific field, one of which is advances in the field of medical biotechnology. Advances in the field of medical biotechnology can support and facilitate efforts to treat a disease. One form of treatment is transplantation. Transplantation is one of the achievements of high-tech medicine as well as the greatest medical achievement that has succeeded in saving the lives of many people throughout the world every year. This action is usually carried out when no other alternative treatment is found in an attempt to heal. Historically, transplantation has been practiced since centuries BC and the techniques continue to progress over time.<sup>1</sup> The various successes in transplantation recorded in its history show that more and more human lives are being saved. However, one of the issues currently faced in transplantation is donor shortages.

Currently, it is recorded that many lives are not saved due to long queues waiting for donors to be available.<sup>2</sup> For instance, according to data collected in January 2023 in the United States, there were more than 104,000 patients on the transplant waiting list and around 17 patients died every day due to waiting for the availability of the organs.<sup>3</sup> In addition, certain conditions occur in patients, where they are deemed ineligible for conventional transplantation. To overcome this, scientists and medical experts are trying to innovate by using genetic engineering technology in transplantation, so that transplantation is not only limited to fellow humans, but animals can also take part as donors (xenotransplantation). Based on many studies and preclinical tests, it was found that pigs are the most suitable animals to be used as donors.<sup>4</sup>

In Islam, pigs as haram animals have been stipulated in the Qur'an, as in al-Baqarah [2]; 173, al-Mā'idah [5]; 3, al-An'ām [6]; 145, and al-Naḥl [16]; 115. The content of these verses which state the prohibition of pork seems to be contradictory to the achievements of progress in the field of medical biotechnology, which helps in the benefit of humans. Accordingly, an approach is required to be able to interpret the Qur'an more dynamically and open to various scientific disciplines. This research attempts to contextualize the issue of pig xenotransplantation by using Jasser Auda's theory of *maqāṣid al-sharī'ah* as an analytical tool. Jasser Auda is a contemporary Muslim scholar who reformed the field of Islamic law by offering a renewal of the theory of *maqāṣid al-sharī'ah* through a systems approach to answer contemporary problems. Apart from that, this research also discusses the interpretations of interpreters from several periods regarding verses about the prohibition of pork. Accordingly, this research aims to determine the interpretation of pig xenotransplantation in the Qur'an according to interpreters and according to Jasser Auda's theory of *maqāṣid al-sharī'ah*.

There are several reasons lay as background of the use of Jasser Auda's theory of *maqāṣid al-sharī'ah* as an analytical tool in this research. First, issues related to pig xenotransplantation and the status of pigs as haram animals in the Qur'an can be analyzed through the study of *maqāṣid al-sharī'ah*, especially in the aspect of *ḥifẓ al-naḥs* (protecting the soul), considering *maqāṣid* of the Qur'an itself is to achieve human benefit. Second, the systems approach to *maqāṣid al-sharī'ah* proposed by Auda is a new form of thinking compared to the *maqāṣid al-sharī'ah* proposed by previous proponents. There are six features of systems theory that Auda uses as a tool for his analysis, making the interpretation of the Qur'an more flexible in dealing with contemporary problems.

According to previous research, it generally shows that several studies try to integrate Islamic studies with pig xenotransplantation. An example is the research entitled "Human Pig Heart Transplantation: Application of Abdullah Saeed's Contextual Approach to QS. al-Mā'idah Verse 3" by Ihsan Nurmansyah, Sherli Kurnia Oktaviana, and Muhammad Adam Abd. Azid. This research shows how Abdullah Saeed's contextual approach can be applied in reviewing the issue of pig heart transplantation in humans. The results obtained show that pig xenotransplantation is permitted in emergency conditions (*ḍarūriyyāt*). Another research was conducted by Arisy Abror Dzukroni with the title "Polemic of Pig Kidney Xenotransplantation for Human Life Sustainability: A Review of Islamic Legal Thought between *Halal-Haram* Principles and the *Maslahah* Concept". This research discusses the practice of pig kidney xenotransplantation using Yusuf al-Qarḍāwī's legal concept of *ḥalāl-ḥarām* and Harun Sencal and Mehmet Asutay's concept of *maṣlahah*. The results showed that pig kidney xenotransplantation was not permitted since it was not considered as an emergency. What differentiates this research from previous research lies in the application of Jasser Auda's theory of *maqāṣid al-sharī'ah*. Accordingly, overall, it shows that the theme discussed in this research has not been discussed in previous research.

## Research Method

This research uses a type of library research which is presented using a qualitative research model with descriptive method. This research uses a qualitative research model to carry out an in-depth assessment of pig xenotransplantation. The data used are primary and secondary data sources. The primary data sources in this research refers to the book *Maqāṣid al-Sharī'ah as Philosophy of Islamic Law: A Systems Approach* by Jasser Auda and several tafsir books from the affirmative or middle period and the reformative or modern-contemporary period. On the other hand, secondary data sources are books, articles, and other reference literature related to the research theme, both to xenotransplantation and to Jasser Auda's

theory of *maqāṣid al-sharī'ah*. After the required data has been collected through documentation method, a method is needed to process and analyze the data. In this research, the data analysis method applied is the content analysis method. With this method, the data that has been collected is then processed and analyze comprehensively to make certain conclusions. In its application, this research will analyze the verses of the Qur'an using a thematic interpretation. After finding the verses related to pig xenotransplantation, then this research will analyze these verses using Jasser Auda's theory of *maqāṣid al-sharī'ah*.

## **Result and Discussion**

### **1. General Discourse on Xenotransplantation**

Xenotransplantation is one classification of transplantation. Transplantation is carried out by placing tissue or organ that have a healthy vitality from the donor's body into the body of a recipient whose tissue or organ is damaged or not functioning in order to save lives and improve the recipient's quality of life (lifesaving). Transplantation itself is classified into three, including: auto transplantation, namely transplantation that occurs when the donor and recipient consist of one individual or the same person; homotransplantation, namely transplantation that occurs when the donor and recipient consist of individuals of the same type or between fellow humans. This type of transplant consists of two donor conditions, which are living donor and cadaver donor; and xenotransplantation, namely transplantation that occurs when the donor and recipient are two individuals of different types or between humans and animals.

In the history of medicine, transplantation has succeeded in saving the lives of tens of thousands of patients throughout the world every year. Transplantation is not a new thing in the 20th century, there are several written sources mentioning transplantation procedures performed in the century BC.<sup>5</sup> Meanwhile, transplantations performed during the Islamic era were practiced by Muslim surgeons, such as tooth and bone transplants.<sup>6</sup> However, the first verified documented human transplant occurred in 1869.<sup>7</sup> There have been many breakthroughs in the history of transplant development.<sup>8</sup> Furthermore, the first verified documented xenotransplantation procedure occurred in 1667, which was tissue xenotransplantation.<sup>9</sup> The first organ xenotransplantation was performed in 1906.<sup>10</sup> During its development, the xenotransplantation procedure was initially carried out using NHPs (nonhuman primates), such as baboons, apes, monkeys, and chimpanzees, and then switched to using pigs.<sup>11</sup>

## 2. Biography of Jasser Auda

Jasser Auda is a Muslim scholar in the field of contemporary Islamic law who was born in 1966 in Cairo, Egypt. In the period 1983-1992, Auda spent his time studying religion at the al-Azhar Mosque.<sup>12</sup> In 1988, Auda received a B.Sc. in engineering at Cairo University and an M.Sc. in the same field and university in 1993. Then in 2001, Auda received a B.A. in Islamic studies at Islamic American University and an M. Jur. in the field of comparative jurisprudence at the same university in 2004. As for his Ph.D. His first degree was in the field of systems analysis and design at the University of Waterloo in 2006. His second Ph.D. was obtained in the field of theology and religious studies at the University of Wales in 2008. His varied intellectual background contributed to him developing *maqāṣid al-sharī'ah* studies using a multidisciplinary approach. Auda has held several important positions, including founding member of the International Union of Muslim Scholars, member of the executive board of the Fiqh Council of North America, member of the board of the European Council for Fatwa and Research, and others. His most monumental works are *Maqāṣid al-Sharī'ah as Philosophy of Islamic Law: A Systems Approach* and *Maqāṣid al-Sharī'ah: A Beginner's Guide*. Auda also received many awards, one of which was from the Qatar Law Forum of Global Leaders in Law in 2009.

## 3. Jasser Auda's theory of *Maqāṣid al-Sharī'ah*

The term *maqāṣid al-sharī'ah* comes from the words *maqāṣid* and *al-sharī'ah*. Etymologically, *maqāṣid* is the plural form of *maqṣid*, which means purpose, aim, principle, intention, target and final goal.<sup>13</sup> Meanwhile, *al-sharī'ah* etymologically means a place where water flows.<sup>14</sup> In Fiqh terminology, *al-sharī'ah* are the laws prescribed by Allah SWT.<sup>15</sup> Terminologically, the definition of *maqāṣid al-sharī'ah* varies from a straightforward definition to a comprehensive one.<sup>16</sup> Regardless of the differences in diction in the definition of *maqāṣid al-sharī'ah*, the ulama *uṣūl al-Fiqh* agree on defining that *maqāṣid al-sharī'ah* is the ultimate goal that needs to be achieved through Islamic law applications.<sup>17</sup> Subsequently, Jasser Auda defines that *maqāṣid al-sharī'ah* is a value system that is able to contribute to the desired application of Islamic law.<sup>18</sup>

For some *uṣūl al-Fiqh* ulama, *maqāṣid* is an alternative expression for *maṣālih* (benefit). The classical classification divides *maṣālih* into *darūriyyāt* (necessity), *hājīyyāt* (need), and *tahsiniyyāt* (completeness).<sup>19</sup> This division was first carried out by al-Juwaynī.<sup>20</sup> Afterwards, the aspect of *darūriyyāt* was elaborated by al-Ghazālī into *al-darūriyyāt al-khams* (five primary benefits) including *hifẓ al-dīn* (preserving the religion), *hifẓ al-nafs* (preserving the soul), *hifẓ al-'aql* (preserving the mind), *hifẓ al-nasl* (preserving offspring), and *hifẓ al-māl* (preserving wealth).<sup>21</sup> In the

scope of law covered, al-Juwaynī divides *maqāṣid al-sharī'ah* into *kulliyah* (universal) dan *juz'iyah* (partial).<sup>22</sup> On the other hand, contemporary classification divides *maqāṣid al-sharī'ah* into *maqāṣid al-'āmmah* (general *maqāṣid*), *maqāṣid al-khāṣṣah* (particular *maqāṣid*), dan *maqāṣid al-juz'iyah* (partial *maqāṣid*). In addition, while classical *maqāṣid* only covers a range of individuals, the contemporary *maqāṣid* covers humans in a wider range. Regarding the source of induction, while classical *maqāṣid* tends to be deduced from the intellectual heritage of Fiqh, contemporary *maqāṣid* is directly extracted from the Qur'an and hadith.<sup>23</sup>

The discussion on *maqāṣid al-sharī'ah* develops significantly as the presence of contemporary problems whose legitimacy is not explained in the Qur'an. To deal with this and as a response to the classical *maqāṣid al-sharī'ah* theory, Jasser Auda conducted research related to the development of the *maqāṣid al-sharī'ah* theory by proposing a systems approach theory.<sup>24</sup> The reconstruction of *maqāṣid al-sharī'ah* performed by Auda does not change the whole concept of *maqāṣid al-sharī'ah*. Instead, the reconstruction merely reorganizes the concept into a more methodological realm in responding to contemporary problems. There are six features within the systems theory utilized by Auda as an analysis tool, including:

a. *Cognition*

The main characteristic of this feature is the separation between revelation (God's commands) and Islamic law (Fiqh). Revelation is the Qur'an and hadith as authoritative sources in Islam. Meanwhile, Islamic law is a legal product formulated by the ulama's interpretation of revelation, which allows for shortcomings and misunderstandings. Accordingly, there is an opportunity for criticism and re-examination.

b. *Wholeness*

The main characteristic of this feature is the use of a holistic approach in the analysis of a legal problem to make it easier to find the broad meaning of the law. This is because a holistic approach works by connecting one part with another part as a whole or by looking at a legal problem with wider implications.

c. *Openness*

The main characteristic of this feature is that it is open to various scientific disciplines and able to interact with external conditions or current phenomena. As the Islamic law system is an open system, in the sense that there is no closing of the door to ijtihad in Islamic law, the laws resulting from the ijtihad of the ulama can be developed to be more flexible in accordance with current developments.

d. *Interrelated hierarchy*

The interrelation among subsystems highly influences the realization of a particular goal. In the perspective of systems theory, *maqāsid al-sharī'ah* is considered as an interrelated system, where the *darūriyyāt*, *hājīyyāt*, and *taḥsīniyyāt* hold equal positions as well as are assessed equally important.

e. *Multidimensionality*

The main characteristic of this feature is the utilization of a multidimensional approach in the analysis of a legal problem in order to avoid being trapped in a reductionistic view. This is due to how a multidimensional approach works, which not only looks at things from one dimension but also involves various dimensions.

f. *Purposefulness*

As all of the previously explained features are employed in order to achieve certain purposes, this feature can cover all of them. The basis for all Islamic legal issues is to explore the intent or purpose of the law itself with the various methods used.<sup>25</sup>

#### 4. Interpretation of Pig Xenotransplantation According to Interpreters

Surah al-Baqarah [2]: 173, al-Mā'idah [5]: 3, al-An'ām [6]: 145, dan al-Naḥl [16]: 115 are verses that clearly indicate the prohibition of consuming pork. These verses include the following.

إِنَّمَا حَرَّمَ عَلَيْكُمُ الْمَيْتَةَ وَالدَّمَ وَلَحْمَ الْخِنْزِيرِ وَمَا أُهْلَ بِهِ لِغَيْرِ اللَّهِ فَمَنْ اضْطُرَّ غَيْرَ بَاغٍ وَلَا عَادٍ فَلَا إِثْمَ عَلَيْهِ إِنَّ اللَّهَ غَفُورٌ رَحِيمٌ

*He has only forbidden to you dead animals, blood, the flesh of swine, and that which has been dedicated to other than Allah. But whoever is forced [by necessity], neither desiring [it] nor transgressing [its limit], there is no sin upon him. Indeed, Allah is Forgiving and Merciful.* (QS. al-Baqarah [2]: 173).

حُرِّمَتْ عَلَيْكُمُ الْمَيْتَةُ وَالدَّمَ وَلَحْمَ الْخِنْزِيرِ وَمَا أُهْلَ لِغَيْرِ اللَّهِ بِهِ وَالْمُنْخَنِقَةُ وَالْمَوْقُوذَةُ وَالْمُتَرَدِّيَةُ وَالنَّطِيحَةُ وَمَا أَكَلَ السَّبُعُ إِلَّا مَا ذَكَّيْتُمْ وَمَا ذُبِحَ عَلَى النُّصُبِ وَأَنْ تَسْتَقْسِمُوا بِالْأَزْلَامِ ذَلِكَ فِسْقٌ الْيَوْمَ يَبْسُ الَّذِينَ كَفَرُوا مِنْ دِينِكُمْ فَلَا تَخْشَوْهُمْ وَاخْشَوْنَ الْيَوْمَ أَكْمَلْتُ لَكُمْ دِينَكُمْ وَأَتَمَمْتُ عَلَيْكُمْ نِعْمَتِي وَرَضِيْتُ لَكُمُ الْإِسْلَامَ دِينًا فَمَنْ اضْطُرَّ فِي مَخْمَصَةٍ غَيْرَ مُتَجَانِفٍ لِإِثْمٍ فَإِنَّ اللَّهَ غَفُورٌ رَحِيمٌ

*Prohibited to you are dead animals, blood, the flesh of swine, and that which has been dedicated to other than Allah, and [those animals] killed by strangling or by a violent blow or by a head-long fall or by the goring of horns, and those from which a wild animal has eaten, except what you [are able to] slaughter [before its death], and those which are sacrificed on stone altars, and [prohibited is] that you seek decision through divining arrows. That is grave disobedience. This day those who disbelieve have despaired of [defeating] your religion; so, fear them not, but fear Me. This day I have perfected for you your religion and completed My favor upon you and have approved for you Islam as religion. But whoever is forced by severe hunger with no inclination to sin - then indeed, Allah is Forgiving and Merciful. (QS. al-Mā'idah [5]: 3)*

قُلْ لَا آجِدُ فِي مَا أُوحِيَ إِلَيَّ مُحَرَّمًا عَلَى طَاعِمٍ يَطْعَمُهُ إِلَّا أَنْ يَكُونَ مَيْتَةً أَوْ دَمًا مَسْفُوحًا أَوْ لَحْمَ خِنْزِيرٍ فَإِنَّهُ رِجْسٌ أَوْ فِسْقًا أُهْلَ لِغَيْرِ اللَّهِ بِهِ فَمَنْ اضْطُرَّ غَيْرَ بَاغٍ وَلَا عَادٍ فَإِنَّ رَبَّكَ غَفُورٌ رَحِيمٌ

*Say, "I do not find within that which was revealed to me [anything] forbidden to one who would eat it unless it be a dead animal or blood spilled out or the flesh of swine - for indeed, it is impure - or it be [that slaughtered in] disobedience, dedicated to other than Allah. But whoever is forced [by necessity], neither desiring [it] nor transgressing [its limit], then indeed, your Lord is Forgiving and Merciful."* (QS. al-An'ām [6]: 145)

إِنَّمَا حَرَّمَ عَلَيْكُمُ الْمَيْتَةَ وَالدَّمَ وَلَحْمَ الْخِنْزِيرِ وَمَا أُهْلَ لِغَيْرِ اللَّهِ بِهِ فَمَنْ اضْطُرَّ غَيْرَ بَاغٍ وَلَا عَادٍ فَإِنَّ اللَّهَ غَفُورٌ رَحِيمٌ

*He has only forbidden to you dead animals, blood, the flesh of swine, and that which has been dedicated to other than Allah. But whoever is forced [by necessity], neither desiring [it] nor transgressing [its limit] - then indeed, Allah is Forgiving and Merciful. (QS. al-Naḥl [16]; 115)<sup>26</sup>*

This research seeks the interpretation of those verses in a couple of tafsir books from several periods. The classification of interpretive periodization in this research refers to the classification by Abdul Mustaqim.<sup>27</sup> In this research, the interpreters from the affirmative period whose interpretations are discussed are Fakhr al-Dīn al-Rāzi (d. 606 H), al-Qurṭubī (d. 671 H), dan Ibn Kathīr (d. 774 H). Those from the reformative period are Ṭanṭawī Jawharī (d. 1358 H), Wahbah al-Zuhaylī (d. 1437 H), and M. Quraish Shihab. In interpreting the verses about pork, the six interpreters explained that the editorial of *lahma al-khinzīri* (pork) indicates the prohibition of all parts of the pig's body. However, the interpreters have



differences regarding the prohibition of pork in the context of consumption (eating) alone or the prohibition of pork in all forms of use. This is because some interpreters allow the use of pigskin for tanning, the use of pig hair as thread, and the use of pigs as donors.

Al-Zuḥaylī explained that the mention of the word 'meat' in the editorial on the prohibition of pork is used to indicate that all parts of the pig are forbidden, considering that pigs are animals that are slaughtered to obtain their meat, which is the main and most important part that is desired.<sup>28</sup> Ibn Kathīr also explained that the mention of the word 'meat' includes all parts of the pig's body. This is as understood in Arabic and based on existing customs,<sup>29</sup> namely *badalu al-ba'di min al-kulli* (replacing the entire meaning with the partial meaning).<sup>30</sup> Meanwhile, al-Rāzī explained that the word 'meat' covers all parts of the pig's body because most benefits of pork are derived from its meat.<sup>31</sup> Regarding the use of pigskin for tanning,

Quraish Shihab quoted the hadith of the Prophet Muhammad saw. stating that whatever skin is tanned, it becomes pure.<sup>32</sup> In contrast to Quraish Shihab, Ṭaṇṭawī Jawharī apparently does not allow any forms of usage of pigs, including its skin for tanning. This is in line with the opinion of Abu Ḥanīfah and al-Shāfi'ī which he quoted, stating that the use of pigskin when tanned is still not permitted, because everything that is tanned can be purified, with exception if it comes from dog skin and pig.<sup>33</sup> In this case, al-Rāzī gave an explanation as explained by Jawharī.<sup>34</sup> Regarding the use of pig hair as thread, al-Zuḥaylī quoted the hadith of the Prophet saw. that allows it.<sup>35</sup> Similar to al-Zuḥaylī, al-Qurṭubī quoted the hadith of the Prophet saw. allowing the use of pig hair for thread.<sup>36</sup>

In the interpretation of the three interpreters of the affirmative period, the verses about pigs are not drawn into the realm of pig xenotransplantation. However, in the interpretation of one of the interpreters from reformative period, Quraish Shihab, the verses about pigs began to be drawn into the realm of pig xenotransplantation. Quraish Shihab quoted Ṭāhir ibn 'Āshūr's opinion,<sup>37</sup> stating that the mention of the word 'meat' in the editorial of the haram of pork shows that its haram is in the context of consumption (eating) only. This is because when the word 'meat' is mentioned in a law context, what comes to mind is eating it. Accordingly, if pigs are used other than in the context of consumption (eating), then it is permitted. As in the opinion of Dāwud al-Zāhirī and Abū Yūsuf who stated that it is permissible to use pigskin for tanning. This is based on the hadith of the Prophet saw. which states that whatever skin is tanned, it becomes pure. Based on this opinion, Quraish Shihab believes that it is allowed to use pig heart valves as donors (xenotransplantation) for humans who are sick and in need of them. This permission is due to the urgency of saving human lives.

It appears that in his interpretation, Quraish Shihab is very open in following the current developments in the world of modern medicine, Accordingly, making his interpretation relevant to the problems occurring in modern society. This is because Quraish Shihab is a reformative interpreter. Apart from that, *Tafsir al-Mishbāh* has the *al-adāb al-ijtimā'ī* (socio-cultural) pattern.<sup>38</sup> Even though in the verses about pork several other foods are also mentioned as being haram, Quraish Shihab provides a more comprehensive explanation of pork, regarding the extent to which pork can be used, the content contained in pork, the nature of pork, and the negative impacts of consuming pork. In his interpretation, Quraish Shihab not only quotes the opinions of Muslim scholars but is also open to the opinions of non-Muslim scientists. One example is when interpreting al-Mā'idah [5]; 3 and al-An'ām [6]; 145, Quraish Shihab quoted Alexis Carrel, a French surgeon who had a huge role and contribution to transplantation with the various techniques and tools he has initiated.

Pigs are condemned by the majority of ulama as unclean animals.<sup>39</sup> The ulama, especially the Shafi'iyyah group, use the word '*rijsun*' in al-An'ām [6]; 145 as a basis for the uncleanness of pigs. This is because the pronoun 'it' refers to the closest word, which is pig.<sup>40</sup> Despite the agreement among most ulama that all parts of a pig's body are unclean, the impurity of pig body parts placed in human body, like in xenotransplantation, has no law impact. This is because the impurity will have law consequences if it is placed outside the human body. This explanation regarding pig xenotransplantation was explained by Quraish Shihab while interpreting al-Mā'idah [5]; 3. Surah al-Mā'idah [5]; These 3 were revealed when the Prophet saw. performed the Wadak Hajj on Friday of the month of Zulhijah, 10 Hijriah<sup>41</sup> and is the last verse about the prohibition of pork that was revealed among other verses about pork. The order of the revelation started from al-An'ām (*makkiyah*), al-Naḥl (*makkiyah*), al-Baqarah (*madaniyah*), and ended with al-Mā'idah (*madaniyah*).<sup>42</sup>

As for the use as medicine of foods that have been mentioned as haram in the Qur'an, the majority of ulama do not allow treatment with anything haram, as per the hadith of the Prophet saw.: "Indeed, Allah SWT. does not make the healing of my people contained in what is forbidden to them".<sup>43</sup> This prohibition is due to the availability of other halal things.<sup>44</sup> Therefore, pig xenotransplantation is not permitted if there are still other treatment alternatives available to save human lives or *ḥifẓ al-nafs*. This permission is related to 'emergency condition' editing. Based on the interpretation of the interpreters, the 'emergency condition' is a condition where no other halal goods are found and it is feared that the condition is life-threatening. The determination of emergency conditions that require patients to

undergo xenotransplantation must be determined by a credible and competent party, which is a doctor.

## 5. Interpretation of Pig Xenotransplantation According to Jasser Auda's Theory of *Maqāṣid al-Sharī'ah*

### a. *Cognition*

In the perspective of Islamic theology, Islamic law (Fiqh) is the result of the *ijtihad* of ulama trying to capture the hidden meaning and practical implications of a passage (*naṣ*). This feature explains that Islamic law (Fiqh) should be described as a conceptual construction resulting from the scholars' cognition of a *naṣ*, not described as revelation (God's command). Although the revelation is divine, the interpretation of a passage depends on the interpreter's interpretation and *weltanschauung* (worldview). With this feature, the verses of the Qur'an are positioned as revelation, while the results of their interpretation are positioned as Islamic law. Considering that Islamic law is a product of the cognition (*idrāk*) and understanding (*fahm*) of the ulama, certainly there are differences in results between these products. Islamic law as a result of cognitive activity allows for shortcomings and misunderstandings so that contemporary scholars have the opportunity to criticize and re-examine the views of classical scholars.<sup>45</sup>

Concerning pig xenotransplantation, pigs have been strictly defined in the Qur'an as an unclean animal. However, interpreters differ in their opinions regarding the prohibition of pork in the context of consumption (eating) alone or the prohibition of pork in all forms of use. Some interpreters do not seem to allow any form of use of pigs, including their use as medicine. Given this feature's perspective, the results of the interpreters' interpretations are positioned as Islamic law which is the result of cognition. The differences existing in interpretation regarding the extent to which pigs can be used shows that there is room for cognition in the text which is not necessarily claimed as a 'revelation' in determining the prohibition of pig xenotransplantation. In this case, after it is known that there is a great urgency regarding pig xenotransplantation, a review of the prohibition on all forms of use of pigs, including the prohibition on the use of pigs as medicine, can be carried out. Accordingly, it can be understood that the issue of pig xenotransplantation falls into the cognitive or *ijtihadi* realm, namely in the form of dialectic result between the interpretation of a passage and the problems that are currently occurring.

b. *Wholeness*

According to a systems theory perspective, the main benefit of systemic analysis is related to the holistic or comprehensive approach that is used. By using a holistic approach in analyzing a law problem, it will be easier to find the broad meaning of the law, thereby avoiding atomistic thinking. This is because a holistic approach works by connecting one part with another part as a whole or by looking at a legal problem with wider implications. This way of thinking is very important in developing contemporary Islamic law philosophy.

In studying pig xenotransplantation, a holistic mindset is required. In this case, it not only examines the position of pigs as an unclean animal but also examines holistically the needs of humans in nowadays era. One way to think holistically is to use thematic interpretation (*mawdū'iy*) as a basis for consideration in reforming Islamic law, so that it will make it easier to understand a certain theme in the Qur'an.<sup>46</sup> In this case, after collecting the verses regarding pigs, the next step is to examine and analyze these verses comprehensively according to the interpretation of the interpreters. Almost all the interpreters explained that the reasons for the prohibition of pork are due to its dangerous contents, bad habits, dirty nature, and the hadith of the Prophet saw. mentioning prohibitions, threats, and condemnation not to touch pork flesh and blood, especially to eat it. However, with the development of modern science and biotechnology, it has been discovered that pigs have many benefits, particularly the benefits of using them as donors. Furthermore, to examine pig xenotransplantation holistically, this can be followed up by examining in detail the reasons why someone carries out pig xenotransplantation.

Based on data presented in organ donation statistics, namely data collected in January 2023 in the United States, there are more than 104.000 patients on the transplant waiting list and around 17 patients die every day due to waiting for the availability of organs.<sup>47</sup> In addition, certain conditions occur in patients, where the patient is deemed not eligible for conventional transplantation, so xenotransplantation becomes the last alternative. Based on the high level of need for donors and other urgencies, pig xenotransplantation can be a progressive cause in saving lives. Accordingly, pig xenotransplantation can be permitted within the framework of *hifz al-nafs*. If studied more deeply, pig xenotransplantation has many benefits that can also be considered regarding the feasibility of its implementation.<sup>48</sup>

c. *Openness*

With this feature, *maqāsid al-sharī'ah* as a philosophy of Islamic law will be built using various scientific disciplines to find common ground that can support each other in forming a unified whole. Collaboration between mujtahids and scientists is necessary in integrating various scientific disciplines in order to answer contemporary problems and find *maqāsid al-sharī'ah*. Hopefully, with this feature, Islamic law can achieve renewal as a result of its openness to other scientific disciplines, as well as opening up a *weltanschauung* or worldview that is capable for a mujtahid.<sup>49</sup> Accordingly, this reform will allow Islamic law to answer and provide solutions to contemporary problems.

Pig xenotransplantation is a relatively new issue regarding its safety and benefits. After knowing the safety and benefits, the openness effort that can be carried out now is to study the implementation of pig xenotransplantation based on the perspective of other scientific disciplines. In interpreting the verses about pigs, several interpreters mentioned the opinion of the majority of ulama who do not allow treatment with anything haram, as in the hadith of the Prophet saw.: “Indeed, Allah SWT. does not make the healing of my people contained in what is forbidden to them”.<sup>50</sup> The prohibition on something that is haram is basically due to the availability of other halal things.<sup>51</sup> In addition, there is a hadith of the Prophet saw. stating that every disease has a cure.<sup>52</sup>

The implementation of this feature within the scope of pig xenotransplantation can open up the interaction of Islamic law with advances in other scientific disciplines, which in this case is biology. With regard to xenotransplantation, until now no other more compatible alternative has yet to be found other than using pigs as donors. Based on many studies and preclinical tests, it was found that pigs are the most suitable animals to be used as donors. Initially, the animals selected were animals that were phylogenetically closer to humans, namely NHPs. However, after further research, scientists and medical experts believe that pigs are more suitable as donors. In spite of the anatomy, physiology, and immunology of NHPs being closer to humans, the risk of virus transmission from NHPs is higher than that of pigs.

Up to now, pigs are more suitable as donors because of the similarity in their organ size, metabolic system, short reproductive time, ease of application of genetic engineering, and the large phylogenetic distance between pigs and humans, which can minimize the risk of virus transmission. However, the large phylogenetic distance between pigs and

humans also results in the risk of immunological rejection.<sup>53</sup> This risk can be overcome with immunosuppressants and the utilization of genetically modified technology.<sup>54</sup> Therefore, the study of pig xenotransplantation cannot stop at just one aspect but needs to be supported by other aspects to realize *maqāṣid al-sharī'ah*. Based on the urgency of pig xenotransplantation as previously explained and research results stating that pigs are the most appropriate animals to be used as donors, pig xenotransplantation is permitted. This is because it aligns with the basic principle of *ḥifẓ al-nafs* which requires the preservation of the safety of the human soul.

d. *Interrelated hierarchy*

The interrelations between subsystems have a very big influence in actualize a purpose. Jasser Auda places *darūriyyāt*, *ḥājjiyyāt*, and *taḥsiniyyāt* in the equal position and is assessed equally important. This position is considered to be very integrative and systematic.<sup>55</sup> It can be seen that the relationship between the three aspects in the hierarchy can emphasize and expand the dimensional pattern of *maqāṣid al-sharī'ah* in the realm of the law scope and the objects covered. In the realm of the range of law it covers, this feature suggests the development of *maqāṣid* into three hierarchies, namely *maqāṣid al-'āmmah* which is derived from all Islamic law, *maqāṣid al-khāṣṣah* which is obtained from certain chapters in Islamic law, and *maqāṣid al-juz'iyyah* which is obtained from certain laws.

About pig xenotransplantation, this needs to be mapped in the form of a hierarchy in *maqāṣid al-sharī'ah*. The hierarchy of pig xenotransplantation in the perspective of *maqāṣid al-sharī'ah* can be explained through the concepts of *maqāṣid al-'āmmah*, *maqāṣid al-khāṣṣah*, and *maqāṣid al-juz'iyyah*. From the perspective of *maqāṣid al-'āmmah*, which is related to the general goal of sharia with protecting the soul, this can be seen from the general goal of pig xenotransplantation. The general purpose of carrying out pig xenotransplantation is in the context of *ḥifẓ al-nafs*. Meanwhile, in terms of *maqāṣid al-khāṣṣah*, that is related to certain goals such as the law on pig xenotransplantation from a biological or medical aspect, this can be known from the urgency, benefits, and safety of pig xenotransplantation. Based on the urgency, benefits, and safety of pig xenotransplantation as explained, it can be understood that the aim of pig xenotransplantation is to save human lives, for which pig xenotransplantation is the last alternative in efforts to preserve lives. This condition is seen as an emergency condition which is an exception to the law on the prohibition of pork.

As for the *maqāṣid al-juz'īyyah* aspect, which is related to the purpose of establishing the law on the prohibition of pork, then this can be known from the interpretation of the interpreters of the verses regarding the prohibition of pork. Quraish Shihab explained several reasons why pigs is prohibited, including its dangerous contents, such as worms, germs, and others. If consumed, this dangerous content will not only have a negative impact on human physical and spiritual health.<sup>56</sup> Apart from that, pigs are also prohibited because they are dirty and easily transmit diseases to humans.<sup>57</sup> It can be understood that the aim of banning pork is basically to prevent humans from the dangerous effects of pork. Furthermore, it can be understood that avoiding everything that contains pork elements is the main way to achieve law objectives (*waṣīlah ḍaruriyat*), which can change in emergency conditions. Accordingly, after constructing the hierarchy of pig xenotransplantation from the perspective of *maqāṣid al-sharī'ah* through the concept of *maqāṣid al-'āmmah*, *maqāṣid al-khāṣṣah*, and *maqāṣid al-juz'īyyah*, then it can be seen that there is no conflict between these three objectives. This is because in systems theory, *maqāṣid* is claimed to be a system that is interconnected with each other (integrative-interconnective).

e. *Multidimensionality*

A system is a structured, not single, and coherent arrangement. Likewise, Islamic law is a system, which consists of various dimensions. In carrying out *ijtihād* to establish Islamic law, there is a necessity of a multidimensional way of thinking, a way does not only see things from one dimension but also involves various dimensions. This multidimensional approach aims to avoid getting trapped in reductionistic views.<sup>58</sup> Theories from other scientific disciplines are also needed to help answer and provide solutions to contemporary problems. This is because Islam and science are dimensions that hold equal importance, so that a problem can be resolved more easily when the two dimensions are combined.

Related to pig xenotransplantation, the contents of the verses stating the status of pigs as unclean animals seem to be contradictory to the achievements of progress in the field of medical biotechnology, which helps benefit humans. Apart from that, the interpreters also have different opinions regarding the prohibition of pork in the context of consumption (eating) alone or the prohibition of pork in all kinds of uses. In interpreting the verses about the prohibition of pork, some interpreters seem to involve other dimensions. Several interpreters such as Quraish Shihab and al-Zuḥaylī seem to involve dimensions of general science, such as biology

while interpreting these verses. In their interpretation, Quraish Shihab and al-Zuhaylī explain the content of dangerous germs and worms found in many pigs' bodies. The worm is *taenia solium* from the tapeworm species, which can reproduce in digestion system. Meanwhile, the germ in question was identified in 1968 as the cause of mass death in the Netherlands and Denmark. Apart from that, the fat contained in pork is high in triglyceride content and the meat is high in cholesterol content, many times higher when compared to the content in other animals.<sup>59</sup> Moreover, Quraish Shihab also quoted the opinion of Alexis Carrel, Nobel Prize winner in medicine. As to pig xenotransplantation, Quraish Shihab is an interpreter who explicitly in his interpretation allows the use of pigs as donors. It appears that in interpreting the verses about the prohibition of pork, Quraish Shihab does not only use one approach, but also involves other approaches, including the biological science approach. By using this approach, the safety and benefits of pig xenotransplantation will be known, so that xenotransplantation is permitted as in the context of *hifz al-nafs*.

f. *Purposefulness*

Islamic systems and laws are both purpose-oriented, which are formed in order to achieve certain purposes. The existence of a purpose is the main point in understanding a passage. As the excavation of *maqāsid* is dug directly from authoritative sources in Islam, the Qur'an and hadith, and not deduced from the intellectual heritage of Fiqh. This is one form of Jasser Auda's reformation of the source of *maqāsid* induction. The intent or purpose of Islamic law can encompass the five features discussed previously. This purposeful feature is the output of the five previous features. The six features of the systems approach are interrelated with purposefulness as the point. This is because each of these features is used to achieve particular purposes.<sup>60</sup> The urgency of pig xenotransplantation is in terms of saving human lives. Xenotransplantation is usually carried out when no other alternative treatment is found in an effort to cure, for example in patients with certain conditions where conventional transplantation is not possible. This is as happened to David Bennett (7<sup>th</sup> January 2022) and Lawrence Faucette (20<sup>th</sup> September 2023), pig heart recipients in the United States. The medical team decided to perform xenotransplantation on Bennett and Faucette after being deemed ineligible for a conventional transplant. This is due to Bennett's medical records that showed PAD (peripheral arterial disease) and internal bleeding complications. In addition, Bennett was also ineligible to receive an artificial heart pump due to the arrhythmia he suffered from. On the other hand, Faucette's medical records showed PAD



and complications of heart failure. This procedure was the only option available to Faucette, who almost lost his life due to heart failure.<sup>61</sup>

The existence of this urgency implies the emergency that is justified by the Shari'a (*darurah shar'iyah*). As the rule of *al-dararu yazālu* (الضَّرُّ يَزَالُ) which means harm needs to be eliminated and the rule of *al-darūrātu tubīhu al-mihdūrāti* (الضَّرُورَاتُ تُبَيِّحُ الْمَحْضُورَاتِ) which means emergency permits things that are prohibited. This refers to the editorial 'emergency conditions' as in the verses about the prohibition of pork.<sup>62</sup> Consequently, saving human lives in the context of *hifz al-nafs* (protecting the soul) is the intended purpose of each feature with consideration in various aspects. Saving human lives in the framework of *hifz al-nafs* is the intended purpose of each feature with consideration in various aspects.

## Conclusion

In interpreting the verses about pork, the aforementioned interpreters explain that the word 'pork' indicates the prohibition of all parts of the pig's body. However, the interpreters differed in their opinions regarding the prohibition of pork in the context of consumption (eating) alone or the prohibition of pork in all forms of use. Quraish Shihab is an interpreter who allows pig xenotransplantation. Based on the application of Jasser Auda's theory of *maqāṣid al-sharī'ah*, it was found that a systems approach can be used to reveal the complexity of the pig xenotransplantation problem comprehensively and contextually. With the cognition feature, the issue of pig xenotransplantation falls into the realm of *ijtihadī*; with the wholeness feature, not only studying the position of pigs as an unclean animal, but also holistically studying the needs of humans nowadays; the openness feature opening up the interaction of Islamic law with other scientific disciplines; with the interrelated hierarchy feature, the problem of pig xenotransplantation can be explained through the concepts of *maqāṣid al-'āmmah*, *maqāṣid al-khāṣṣah*, and *maqāṣid al-juz'īyah*; with the multidimensionality features, not only using one approach, but also involving other approaches; and with the purposefulness feature, pig xenotransplantation is permitted due to the urgency that is justified according to sharia (*darurah shar'iyah*). Based on the urgency, benefits, and safety of pig xenotransplantation as explained, it can be understood that the aim of pig xenotransplantation is to save human lives, for which pig xenotransplantation is the last alternative that can be a progressive cause in efforts to preserve lives. This condition is seen as an emergency condition which is an exception to the law on the prohibition of pork.

## Endnotes

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56. Shihab, *Tafsīr al-Mishbāh*, Vol. 3, 19-20.
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