

CHAPTER I INTRODUCTION

A. Background

Al-Quran as holy book of Moslems was God's verses that revealed to Prophet Muhammad (pbuh) that contains straight road for mankind. And the reason why Quran was revealed is to become guidance for human in achieving life happiness, either in the world or in the hereafter.¹

Al-Quran is the “*i’jâz*”² of Islam that stand for and his miracle always be strengthened by the development of science.³ Allah has given to mankind much primacy and excess for pierce all square and inclines the elements of natural power and made it as attendant for the purposes of humans.⁴

So, science can be distinct as a well recognized *sunnatullâh*⁵ found by man through his logical thinking and works. Science will develop human quality of thinking and activities.

They were created, mutually, in couple and given by nature for breeding until venom day. Breeding is human nature that given by God as manifest of reproduction utility. In al-Qur’ân clearly stated about human development process in uterus (*rahîm*) in verse al-Hajj (22): 5 and al-Mu'minûn (23): 13-14. Explanation of those verses is basic because it can be known about steps of Adam's offspring in uterus.⁶

¹ Muhammad Noor Ichwan. *Memasuki Dunia Al-Quran*, Semarang: Penerbit Lubuk Raya, 2001. p.48

² Look the explaining of I’jâz in Mannâ’ al-Qattân, *Mabâhith fi Ulûm al-Qur’ân*, (Manshûrat al-’Asr al-Hadîts, 1973), third edition, p. 258-259

³ Mannâ’ al-Qattân, *Mabâhith...*, p. 9

⁴ Mannâ’ al-Qattân, *Mabâhith...*, p. 257

⁵ *Sunnatullâh* was condition in the world which follow the applicable law and certitude in the world. The *sunnatullâh* message was described by Quran like: al-Isrâ(17):77; Fâtir(35):43; Ghâfir(40):85; al-Fath(48):23; al-Ahzâb(33):32,62; al-Kahf(18):55; al-Hijr(15):13; al-Anfâl(8):38.

⁶ Talking about the developing human, Quran reminds us to verses that bearing with fertilization phase or appointment between sperm and ovum. At least there are three verses of Quran that talking about sperm (*maniy*), that is: (1) al-Qiyâmah (75): 36-39, (2) an-Najm (53): 45-46, and (3) al-Wâqi’ah (56): 58-59. Verse of al-Qiyamah (36-39), explicitly, declare that *nuthfah* is injected sperms by uterus (*rahâm*). Man genital organ contain around two hundred million human seeds, meanwhile successful one meets by ovum just one only. That is that

Besides that, since Aristotle summaries dominant theories which had extended at his era that related with fetus development, hence occur two polemics between supporters of fetus theory that from spermatozoa; and supporters of fetus theory that from menstruation. However, most of them have perceptions that human originally from reduction activity inside spermatozoa. Then, they illustrated and imagined this existent obviously inside spermatozoa; from just it develops and grows in uterus of female just like plants.

Yet, no one from both side which give attention that each of spermatozoa and ovum have same composition in fetus formation. Sooner or later, in 1883 **Edouard van Beneden** (1845–1901) proofed truth of this attention. He described how the chromosomes are derived in equal numbers from the conjugating germ cells. This led to the discovery of reductive division in the formation of the gametes.⁷

Between 1888 and 1909, **Theodor Boveri** (1862-1915) also gave a proof that chromosomes broke to pieces and consist of different characteristics of genetic. And then, in 1911 **Thomas H. Morgan** (1866–1945) claimed that certain traits were genetically linked on the chromosome, thus visualizing a linear arrangement of genes and stimulating the construction of genetic maps.⁸

From historical background above, assumed that society at 18th century just figure out that fetus was come from conception between sperm and ovum. But the truth is just known in beginning 20th century.

Now long before, al-Qur'ân and Sunnah have stated scientifically and accurately that human, indeed, was created from conception of sperm and ovum which called "*nutfah amsyâj*," Allah said in surah al-Insân [76]: 2:

إِنَّا خَلَقْنَا الْإِنْسَانَ مِنْ نُطْفَةٍ أَمْشَاجٍ نَبْتَلِيهِ فَجَعَلْنَاهُ سَمِيعًا بَصِيرًا

intended Quran with "*nutfah the shines sperm.*" Then, an-Najm (45-46) inform that from *nutfah* which it shines, God created both of male and female. (M. Quraish Shihab, *Mukjizat Al-Quran*, Mizan, p. 167)

⁷ *The Encyclopedia of World History, 6th Ed.* (Boston: Houghton Mifflin Company, 2001).

⁸ *The Encyclopedia of World History, 6th Ed.* (Boston: Houghton Mifflin Company, 2001).

Several *mufasssir* made agreement that word "*amsyâj*" is same with "*akhlâth*" (mixing), grouping result between sperm and ovum.⁹

Nuthfah is a driblet, but its formation as something that gets to mix (*amsyâj*), and it was ovum that fertilized by spermatozoa that at the same time it consist of male and female chromosomes.

But then Al-Qur'ân have said:

وأنه خلق الزوجين الذكر والأنثى، من نطفة إذا تمنى (النجم: 45-46)

And is really, He is Allah already creates all something gets couple, male and female that most composes from *nuthfah* while comes out from its privates (Al-Najm: 45 – 46)

God have determined all-round one will happen on that embryonic candidate, male or female. Then, who that give information to Muhammad (pbuh) that male is contained two types of sex chromosomes, which is X and Y, this type will determine genetic of fetus. Eventually, it was known by electronics microscope in many centuries ago. Database at electronic microscope is new that male gene or female there is only in *nuthfah* male and is not at ovum. It means that we, in the early century 20 as a whole, did not know that male gene or female marks sense on *nuthfah* male. But then Al-Qur'ân has already downed by God 14 century ago have borne out with very clear.

And last, as it were we interpose that womb is robust and safe place and securing for fetus developing, and gives protection to fetus of things who may happen. We know that holy Quran have enlightened that it will and bear out it since 14 century ago. God decree:

فجعلناه في قرار مكين، إلى قدر معلوم، فقدردنا فنعم القادرون

⁹ Look in *Tafsir Jalalain*, interpretation of this verse;

... (مِنْ نُطْفَةٍ أَمْشَاجٍ) أَحْلَاطٌ ، أَي مِنْ مَاءِ الرَّجُلِ وَمَاءِ الْمَرْأَةِ الْمُخْتَلَطِينَ الْمَمْتَزَجِينَ.

See also, *Ahkâm al-Qur'ân li ibn al-'Arabi*; vol. 7, p. 496;

... (مِنْ نُطْفَةٍ أَمْشَاجٍ) بِمَعْنَى أَحْلَاطٍ . مَاءِ الرَّجُلِ غَلِيظٌ أَيْبُضٌ ، وَمَاءِ الْمَرْأَةِ رَقِيْقٌ أَصْفَرٌ ، فَيَجْمَعُهُمَا الْمَلِكُ بِأَمْرِ

اللَّهِ ، وَتَنْقَلِبُهُمَا الْقُدْرَةُ مِنْ تَطْوِيرٍ إِلَى تَطْوِيرٍ ، حَتَّى تَنْتَهِيَ إِلَى مَا دَبَّرَهُ مِنَ التَّقْدِيرِ ، وَقَدْ بَيَّنَّا ذَلِكَ فِيمَا تَقَدَّمَ .

Therefore, We make it (man) in place that really robust and safe, until time already being known, then we establish all something, quite Allah one carefully rule maker (Al-Mursalat: 21 - 23)

Generally, the interpretation of the Qur'an is used two methods of interpretation, the method *Tafsîr bi al-Ma`tsûr*¹⁰ and methods of *Tafsîr bi al-Ra'yi*¹¹ with a variety of approaches. Various methods and approaches of interpretation is strongly influenced by various factors, such social conditions, customs of society, education background and a certain tendency of exegetes.¹²

To understand the Islamic sciences that in holy Quran, therefore, requires an understanding about the principles of Islam itself, even though these ideas may be difficult to express in modern terms and strange to readers accustomed to another way of thinking. Yet a statement of these principles is necessary here.

Must be known that sciences invention on this last decade have authenticate the truth of Allah's decree in holy Quran by use modern tool to know fetus development process in uterus because logical thinking, mathematical analysis, observation, experimentation, and even rational interpretation to Holy Book, those have legitimate role in the science effort of early Moslem scientists. While Moslems have to hold faithfully on *tauhid's* spirit.¹³

¹⁰ *Tafsîr bi al-Ma'sur* is interpreting al-Quran with al-Quran itself; with Prophet traditions; or and with argument of *shahâbah* and *tabi'in*. See, al-Dzahabî, *Al-Tafsîr wa al-Mufasssîrîn*, vol. I, p. 152

¹¹ Word *ra'yu* is identical with *ijtihad*, so *Tafsîr bi ar-Ra'yi* can be said as interpreting al-Quran with *ijtihad* of course after *mufasssîr* fulfils requirements to interpret al-Quran. The requirements such as: Understanding Arabic language with the grammatical in advance, understanding knowledge of *ushuluddin*, *ushul al-fiqh*, moreover *asbâb nuzul* and *nasikh wa mansukh*, also knowing the stories in the Qur'an and furthermore. See, al-Dzahabî, *Al-Tafsîr*, vol. I, p. 266 - 268

¹² M. Quraish Shihab, *Membumikan Al-Qur'an*, Bandung: Mizan, 1992, cet. I. p. 72 - 73

¹³ Osman Bakar, *Tauhid dan Sains Vol. II*, 2008, p. 73.

B. Research Questions

After analyzing the background above, I want to show, obviously, about human being, as actor, in deciding his fetus, male or female, in accordance with Islam and science. Therefore, based on background of study above hence question of research as below:

1. What is scientific interpretation of surah al-Insân (76): 2 about sex determination on fetus?
2. What is human's role on sex determination?

C. Aim and Significance of the Research

The aim of the research is to answer research problems planed in the questions above. Those questions become main point of research and to avoid from vague direction.

Therefore, the aims of this research are:

1. To understand scientific interpretation of surah al-Insân (76): 2 about sex determination on fetus.
2. To understand human's role on sex determination.

Indeed, this research is new in focusing about human choice in determining their fetus.

In additional, the researcher hopes this research become valuable and helpful to the civics academic in interpreting their insight about holy Quran.

D. Prior Research

In this paper, writer use scientific paradigm¹⁴ which was used by Thanthâwî Jauharî in his work.

¹⁴ *First of all*, concerning scientific paradigm of *al-Jawâhir*, its ontological basics can be found in Thanthâwî beliefs about the ideal Muslim dictum (as *khaira ummah*) who were promised by the Lord, will rule the world, if leading the scientific mastery of science.

Read Thanthâwî statement in *al-Jawâhir*, vol. VI, p. 119:

لا سبيل لصلاح البلاد الإسلامية واسعاد الأمة المحمدية إلا أن يحدوا في العلوم والصناعة والأحكام الجبارات والإمارات والنظام المدن والجماعة ولم يؤسنا ربنا من السعادة ولم يقنطنا من اصلاح حالناة التغيير العادة ،

For that promise, God revealed al-Quran and ordered the Muslims to progress in various sciences.

Second, the book “*Al-Quran the Ultimate Truth*” written by Syaikh Abdullah M. Al-Ruhaili consists of dialogue about scientific facts that revealed in The Quran and Authentic Hadits. The proof that was shown in Quran is the truth which can be tested, since Quran was downed until hereafter. Therefore, the facts are significant to be known by humankind. One of the facts is about human development phases in Quran, and then it was strengthened by scientific facts. But, it just proofing of scientist within dialogue that science view about human development was in line with al-Quran.

In this research, writer tried more focused on sex determination that is a branch from human development topic.

Third, “*Anatomi dan Fisiologi untuk Paramedis*” written by Evelyn C. Pearce, translated to Indonesian language by Sri Yuliani Handoyo. In her book, there was chapter 21st that explained about organs and process of reproduction system. In addition, this chapter mentioned any organs that were for reproduction and anything related to reproduction, either for man or woman.

Fourth, “*Human Genetics*” written by Lewis Ricki. This book taught us about genetic principles. There was chapter that explained about chromosomes, sex chromosomes and sex determination.

Fifth, “*Bibel, Quran dan Sains Modern*” translated from *La Bible, Le Coran Et La Science* written by Dr. Maurice Bucaille. After he observe objectively on sacred texts, he conclude that everything that was stated by Quran is in line with human experiment about phases of embryo process and is not contain several thing that science can critics it.

Eventually that problem is religious science and knowledge, hence man can choose its own destiny and tries as good as possible to utilize any opportunities to reach their purpose. But, they have to hold faithfully on *tauhid's* spirit.

But then, Thanthâwî analyzed reality of socio-cultural and intellectual quality of Moslems who were in weaknesses because of lack in sciences.

E. Theoretical Framework

The researcher here will use scientific paradigm. One of characteristic of Quranic interpretation model and hermeneutic in first half year of twentieth century which makes differentiation with previous interpretation model is leaning to scientific interpretation (*al-tafsîr al-'ilmî*) or using scientific theories in interpretation process. Developing of this scientific interpretation work is a *conditio sine quo non* as a consequence of dialectic between Quranic interpretation and science developing in Renaissance era.¹⁵

At least, there are three reasons why this scientific interpretation model develops and becomes true. *First*, is situation of religio-intellectual in order to make a proof and strengthen belief that Holy Quran is relevant and in line with science development, and because of that, its sacredness and transcendentality as revelation can be kept. *Second*, is demand to improve the knowledge which based on scientific interpretation of al-Quran. This was based on assumption that al-Quran itself consists of texts of scientific signal (*ayat kauniyyah*) which enters empirical and historical area, besides always to suggest to make observation and experiment, and also to suggest to using intelligence and intuition. If the first opens widely the Quranic interpretation via scientific approach or based on scientific theories, not mere justification, the second opens more widely the Quranic interpretation via methodology then encourages for making scientific research.¹⁶

Third, as the efforts of paradigmatic critic to modern scientific development which affectively caused sacredless and demystical of the world, also releases the thinking from transcendent to rational-verification. Trough this scientific interpretation can be formulated as “*etika pengawal iptek*” which will give hermeneutic-ethic framework in development of modern science.¹⁷

¹⁵ Hendar Riyadi, *Tafsir Emansipatoris, Arah Baru Studi Tafsir Al-Quran*. Bandung: Pustaka Setia, p. 115.

¹⁶ Hendar Riyadi, *Tafsir Emansipatoris ...*, p. 116.

¹⁷ Hendar Riyadi, *Tafsir Emansipatoris ...*, p. 117.

As long as Quranic interpretation history, the present of this scientific interpretation always has any contra responds from many Moslem scholars. One side looks this interpretation as a religio-intellectual need, and another side looks this one mere as a justification or legitimacy toward new science invention that has relative truth with al-Quran, the absolute truth. This effort is in danger because it will reduce the authority and the absolutism of al-Quran, beside bring Holy Quran under profane theoretical framework.¹⁸

Must be underlined here, what a pity that contemporary view about Islam and science is covered and robed by ambiguity and confusion sort, that almost all caused by failure and disability in giving various definition and explanation, appropriately, on both of terminology. Thus, need to be defined and worded by high capability. Then, failure and disability in explaining appropriate context where both of terminology is utilized.¹⁹ For researcher, those two disabilities are reminding various confusions. Therefore, writer will give limitation relationship between Islam and science.

Whatever relationship type between Islam and science in this paper will depend on meanings applied on both or which from each dimension that was emphasized.

1. Which is Islam that gets bearing with science?

Actually, Islam²⁰ can be understood in a few understanding. (1) Term of "Islam" was utilized by some people who refer to normative teachings of religion that consists in Holy Quran and Sunnah. Even, there are Moslems—when talks about relationship between Islam and science—did not see Sunnah literature as source in understanding Islam. Then, (2) there are people that use "Islam" is not only refer to normative teachings, but also it refers to culture and civilization, since this dimension have been manifested in Moslem history.²¹ If "Islam" is understood by the last meaning, therefore it would cover its past intellectual culture and science

¹⁸ See, al-Dzahabi, *At-Tafsir*, vol. I, p. 474.

¹⁹ Osman Bakar, *Tauhid....*, p. 42.

²⁰ The very word Islam means both "submission" and "peace."

²¹ Osman Bakar, *Tauhid....*, p. 46

that ever becomes its integral partition. And, surely, it will vary in range, content, and its depth from who ignores various theories and science traditional practice in Islamic civilization and its conceptual relation with religion.

Therefore, in this paper, writer does not forget this approach that intellectual culture and science ever become its integral partition. This approach depend on truth that many formulations at past about relationship between religion and science has valuable to reach similar conceptual purpose.

2. Which science or its part that concerned by Islam?

Science was not an entity that clears for any one, therefore any diversity of understanding about this terminology in contemporary discourse needs to be worded. First of all is terminology usage of “*science*” until occur any misunderstandings. Some people utilized this term in two categories, mere terminology which confines to *nature* and which expands until reaches *human* and *social* sciences. Remembering the fact that this term had been used in scientific world and modern scholarship, as it’s was utilized on Arabic language, ‘*ûlûm*²² (*sciences*), in Islamic tradition.

Second is misunderstanding about science context. Perhaps no other way in concerning science world with similar characteristics for centuries, in contrary, perhaps also available a lot of science types as many as civilization types arose.²³

In relation with *tafsir 'ilmiy*, writer makes the limitation domain of scientific discipline on *embryology* and *genetics*. This paper not only works in science main principle, but also works in specific relationship between Islam and science itself.

²² In the holy Quran, there were found terms ‘*ilm*—in many forms—at least 854 times.

²³ Osman Bakar, *Tauhid....*, p. 48

F. Hypothesis

Hypothesis is job instrument and important theory which is unleaveable. Hypothesis usually constitutes logic deduction from theory or proposition that has specific character, so it is more ready to be tested empirically²⁴; *e.g.* when we wants to explain why on certain context, al-Quran utilizes *sulâlah min thîn* and on another context utilizes *nuthfah amsyâj*.

Hypothesis gives information about variable research and its relationship. For convenient information with previous variables, several methodological controls must be done; such us, *first*, doing interpretation toward concept that is used in the research and formulated variable from that concept; and, *second*, arranging instrument, scale, and sample determination. Thus hypothesis will determine how to make observation.²⁵

The hypothesis in this research is about sex determination that will be interpreted from *nuthfah amsyâj* terminology. Signals in Quran and Sunnah that “*nuthfah amsyâj*” are result of spermatozoa and ovum mixing, meanwhile embryonic sex determination is depend on sperms obstetric type between XX (female) and XY (male). And this fact is proved by modern science.

Then human can try to decide their fetus via knowing either characteristics of spermatozoa or ovum, *e.g.* quantity, quality and its motility; and knowing characteristics of foods and drinks they consume; the timing of intercourse; and the center acid and bases. But, during trial, they must believe on *tauhid's* spirit that the result only from Allah, the Ultimate One.

G. Methodology of Research

The final conclusion of this research depends on the data, its collection, and its analysis. Because this research is based on library research, it uses methods as follow:

1. Source of Data

²⁴ Hendar Riyadi, *Tafsir Emansipatoris* ..., p. 109

²⁵ Hendar Riyadi, *Tafsir Emansipatoris* ..., p. 109

Source of data in this research consist of two types, primary source and secondary source of data:

a. Primary Source of Data

Primary source of this research is al-Quran *Mushhaf Utsmânî* and its translation by Abdullah Yusuf 'Ali.

b. Secondary Source of Data

Secondary data source is supporter books which can complete primary data source and gets to help deep analysis study to interpretation of surah al-Insân (76):2, which gets bearing with human creation. This study was gathered by library research, remembering this study about Quranic verses with interpretation analysis toward books of tafsir, therefore methodologically this is explorative research category, its mean understand al-Quran that related with human creation with dig up scholars opinion in various interpretation opus.²⁶

Because of the interpretation of al-Quran can not be avoid which the result is relative, so then not all of tafsir books become reference in this research.

In this case, writer makes limitation on three tafseer books; (1) *al-Jawâhir fî Tafsîr al-Qurân al-Karîm*, magnum opus of Tantawi al-Jawhari (dead 1358 H/1940 M), representing the pattern of *tafsîr 'ilmiy*; (2) *Tafsîr Jâmi' al-Bayân fî Tafsîr al-Qurân* masterpiece of *Ibnu Jarîr al-Thabari* (dead 1354 H/1935 M), which has categories as *tafsîr bi al-ra'y*,²⁷ (3) *Tafsîr al-Qur'an al-'Adzîm* karya Imam ibn Katsîr (700 – 774 H) which represented *tafsîr bi al-Ma'tsur*.²⁸

²⁶ Prof. Dr. Suharsimi Ari Kunto, *Prosedur Penelitian: Suatu Pendekatan Praktik*, Rineka Cipta, Jakarta, 1998, p. 8.

²⁷ See, al-Dzahabî, *al-Tafsir, vol,I*, Kairo: Dar al-Kutub al-Haditsât, 1962 M/1381 H, p 256.

²⁸ Manna' Qaththân, *Mabâhith fî 'Ulûm al-Quran*, p. 386, See also, Muhammad Ali Iyâzî, *al-Mufasssîrûn Hayâtuhum wa Manhajuhum*, p. 303.

Also, Professor Emeritus Keith L. Moore²⁹ is one of the world's most prominent scientists in the fields of anatomy and embryology and is the author of the book entitled *The Developing Human*, which has been translated into eight languages. This book is a scientific reference work and was chosen by a special committee in the United States as the best book authored by one person.

Thus, many literatures as primary and secondary reference in this research, and do not close another source if possible.

2. Collecting Data

This research is a library research. Collected and analyzed data taken from literatures; book, journal, bulletin, article, and the like.³⁰ The library research confines and circumscribe activity only on data literature-base without conducting field research.³¹

The main of problem is about global understanding verse al-Insân (76): 2, such as interpretation of verses and its *mufradât*, *munâsabah* (correlation of verse to the other verse), and view of *mufassirûn* about this verse even understanding it. Besides that, it also explains about science view about sex determination, containing of Pattern of Heredity, Sex Chromosomes, and Sex Determination.

3. Analyzing of Data

a. Descriptive Method

Descriptive is an exploration which is narrating, analyzing and classifying, also interpreting several data.³² Descriptive method also needs inductive method (compiling data from particular science to general one) and deductive method (compiling data from general

²⁹ Dr. Keith Moore is Professor Emeritus of Anatomy and Cell Biology at the University of Toronto, Toronto, Canada. There, he was Associate Dean of Basic Sciences at the Faculty of Medicine and for 8 years was the Chairman of the Department of Anatomy. In 1984, he received the most distinguished award presented in the field of anatomy in Canada, the J.C.B. Grant Award from the Canadian Association of Anatomists.

³⁰ Prof. Dr. H. Abdurrahman Fathoni, M.Si, *Metode Penelitian dan Teknik Penyusunan Skripsi*, Jakarta: Rineka Cipta, 2006. p. 65.

³¹ Mustika Zed. *Metode Penelitian Kepustakaan*, Jakarta: Yayasan Obor, 2004, p. 10.

³² Winarno Surakhmad, *Pengantar Penelitian Ilmiah*, Bandung : Tarsito, 1985, p. 139

science to particular one) in taking conclusion. In this case writer will elaborate data related to sex determination on fetus.

Logical consequent from textual data is focusing data on content analysis.³³ Therefore, this method was used as an approach to elaborate and describe figure or scholar thought in order to get information in their opus objectively. In other word, this is about fact finding.³⁴

b. Scientific Method

Understanding verses that engaged with *kauniyyah* and human existence in society is not enough if only see literal text interpretation, but also has to involve a lot of science disciplines, particularly natural science and social one. Besides that, interpreter shall see verses context, which is situation and condition that cover it and its cultural social situation. According to M. Quraish Shihab, minimally interpreter must notice about linguistic, context between word and verses; and scientific invention.³⁵

Concerning the idea of this Quranic scientific, most of people who throw some critics because it only justify or legitimate new discoveries or scientific truth which relative truth from al-Quran which absolute truth. Al-Syâthibî is one of scholar that throw critic to this Quranic scientific, said that al-Quran was downed not for scientific purpose. He claimed that who did not make science limitation on interpreting al-Quran will get mistaken and wrong way.³⁶

Significance of Quranic scientification is constantly in line with significance of universal message of Quranic interpretation generally. Furthermore, Quranic scientification is intellectual-religiosity need and history that has significances on positioning Islam.

³³ *content analisis* is study method and data analysis systematically and objectively about content from a message or communication. (see M. Alfatih Suryalangga, *Metodologi Ilmu Tafsir*, ed. A.Rafiq, (Yogyakarta: Teras, 2005), p. 76-77)

³⁴ Anton Bakker and Ahmad Haris Zubair, *Metodologi Penelitian Filsafat*, (Yogyakarta: Kanisisus, 1990), p. 91.

³⁵ Quraish Shihab, *Membumikan Al-Quran*, (Bandung: Mizan, 1992), p. 105.

³⁶ Read more, M. Quraish Shihab, *Membumikan Al-Quran dan Peran Wahyu dalam Kehidupan Masyarakat*, Bandung: Mizan, 1992, p. 101-102.

However, Quranic interpretation that involves science discipline will result new theory of Quran reality that it must be in line with Islamic law (*syarî'ah*). This guidance is needful so that interpretation not outward from basic principle.³⁷

If we observe, in Quran, it can be found two reality forms, empirical reality and non empirical reality.³⁸

Get starting point from reality in Quran as reality that can be approached trough empirical experience in line with signalmen Quran about *ayat kauniyyah* and human existence in society; therefore it is correct if Quranic sentences were interpreted scientifically and fuses it relevantly with development knowledge passes through analytic approach, interdisciplinary and contextual.³⁹

H. System of Writing

Chapter I is Introduction Background, Formulation of Problem, Aim and Significance of The Study, Prior Research, Theoretical Framework, Hypothesis, Methodology of Research and System of Writing.

Chapter II is the description of Scientific Interpretation. In this chapter will be explained about Science Classification, Scientific Interpretation Method, Scholar Opinions on Scientific Interpretation, Arguments on Scholar Opinions about Scientific Interpretation, Classification of Scientific Interpretation, and Requirements of Scientific Interpretation.

Chapter III is The interpretation about sex determination on quranic perspective: Description of surah al-Insân (76): 2; Understanding of Surah al-Insân, *Asbâb al-Nuzul Surah al-Insân, Tafsîr Mufradât, Munâsabah of verses*. The Reproductive System; The Male, The Female, and Conception (Fertilization). Then Phases of Human Development in Uterus. Besides that, it

³⁷ Rohimin, *Metodologi Ilmu Tafsir & Aplikasi Model Penafsiran*, (Yogyakarta: Pustaka Pelajar, Cet I, 2007), p. 86.

³⁸ Ahmad Syafi'e Ma'arif, *Posisi Sentral al-Qur'an dalam Studi Islam*, 1989, in "Dr. Rohimin, M.Ag, *Metodologi Ilmu Tafsir & Aplikasi Model Penafsiran*, (Yogyakarta: Pustaka Pelajar, Cet I, 2007), p. 86.

³⁹ Rohimin, *Metodologi....*, p. 89

also explains about science view about sex determination that contains Pattern of Heredity, Sex Chromosomes, and Sex Determination.

Chapter IV is the logical consequence from theoretical construction about scientific interpretation of surah al-Insân (76): 2 on third chapter above. This chapter is analysis, as the main purpose of this research.

Chapter V is the epilogue, conclusion from previous chapters. This chapter contains Conclusion, Suggestions and Closing.

And the very last, it contains bibliography.