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THE RELEVANCE OF JEAN PIAGET'S THEORY OF COGNITIVE DEVELOPMENT TO INITIAL FORMATION

Azenda Ikyegh, CSSp.

Abstract

Initial Formation of candidates to religious life and priesthood is one of the vital areas in the Church and the Congregation of the Holy Spirit (Spiritans). This is so because the future of the Spiritans' mission in particular and the Church's mission at large depends upon it. Owing to this fact, both the Church's and Spiritans' documents emphasize strongly that care and attention should be paid to the formation of candidates to religious life and priesthood. This article focuses on the cognitive development theory of Jean Piaget (1896 - 1980) and its relevance to formation of students in initial formation programme of the Church, with a particular attention to the formation of students in the Congregation of the Holy Spirit (Spiritans). After a brief background of Jean Piaget, the article exposes and explains his cognitive theory of development with particular attention to the main principles that constitute it: the Schema; the Processes of Cognitive Development; and the Stages of Development. The article critically evaluates this theory by looking at its positive and negative implications, and its contribution to the field of cognitive development in particular and developmental psychology in general. Of paramount importance is the understanding and application of this theory to the formation

programme of candidates in initial formation of the Church and the Spiritans. Judging from the expository, explanation, understanding and application of this theory to the formation programme of the initial formation of the Spiritans, the article concludes that though the theory is limited in some ways, it is very much relevant to the formation of candidates to religious life and priesthood in the Church and in the Spiritan Congregation, if it is closely followed together with Spiritans' Church's documents on formation.

Key words: Piaget, Theory, Cognitive development, Schema, Stages, Formation, Spiritan.

Introduction

Cognitive development is one of the major areas of developmental psychology. Developmental psychology is the branch of psychology that studies how people grow and change over the course of a lifetime. Alan Slater and Gavin Bremner define developmental psychology as "the discipline that attempts to describe and explain the changes that occur over time in the thought, behaviour, reasoning, and functioning of a person due to biological, individual, and environmental influences"¹. In other words, it is a branch of psychology that focuses on human growth and development, which occurs throughout peoples' lifetime, and from different perspectives. Formerly, developmental psychologists focused their study of human development from birth to adolescence. Lisa Oakley notes that, this is because

¹ Alan Slater and Gavin Bremner, *An Introduction to Developmental Psychology*. 3rd Ed. (UK: Amazon.com, 2007), 4.

during this period "there is the greatest amount of change and most dramatic development that takes place. So, the developments that occur during the period of birth to adolescence are commonly the focus of developmental psychology"². However, with the increasing research in human development, the area has now covered lifespan development. These changes include not only physical development, but also cognitive, social, intellectual, perceptual, personality, emotional and spiritual growth. These changes, though separated, they are interconnected. Cognitive development, which will be considered in this study, is also related to other areas of human development.

Cognitive development is a field of study in neuroscience and psychology which focuses on how children think, explore and figure things out. It is the development of knowledge, skills, problem-solving and dispositions, which help children to think about and understand the world around them³. In other words, it is a development that occurs in a child in terms of information processing, conceptual resources, perceptual skills, language learning and other aspects in order to help him/her to understand and make meaning in the environment and the world around him/her.

Cognitive development, which involves a study that focuses on psychological processes and activities that are geared towards

² Lisa Oakley, *Piaget's Theory of Cognitive Development*. (USA: Luxottica Group, 2004), 1.

³ Saima Latif, *What is Cognitive Development? 3 Psychology Theories*. [Online] Available at <<https://helpmegrowmn.org>> [Accessed 20th October 2023].

thinking and knowing, covers many theories and a wide area of studies. However, in this study, we shall consider the cognitive development theory of Jean Piaget (1896 - 1980) and its relevance to formation of students in initial formation programme with a particular attention to the formation of students in the Congregation of the Holy Spirit (Spiritans).

In what follows, we will first of all look at a summary of the background of Jean Piaget. This will be followed by the explanation of his cognitive theory of development with particular attention to the main principles that constitute it: the Schema, which is seen as the basic cognitive structure that represents all activities in a human person, which enables him/her to make sense of the world; the Processes of Cognitive Development – Assimilation, Accommodation, Equilibration; and the Stages of Development which include: the Sensorimotor Stage (from birth to 2 years), the Pre-operational Stage (from 2 to 7 years), the Concrete Operations Stage (from 7 to 11 years), and the Former Operational Stage (from 11 years and above). The next step will be a critical evaluation of this theory. Here, we shall consider different reactions – positive and negative, from different people about the theory, and its contribution to the field of cognitive development in particular and developmental psychology in general. The next section of this paper, which is a vital one, will focus on the understanding and application of this theory to the formation of candidates in initial formation. Then, it will be followed by a conclusion.

Background to Jean Piaget (1896 - 1980)

Jean Piaget was born on August 9, 1896, in Neuchatel, in the Francophone region of Switzerland. He was the oldest son of his parents Arthur Piaget (Swiss) and Rebecca Jackson (French). According to Leslie Smith⁴, his father was a professor of medieval literature at the University of Neuchatel, a passionate and dedicated person to studies and work - traits that Jean Piaget began to emulate from an early age. Piaget himself later described his father as a man of a painstaking and critical mind, who disliked hastily improvised generalizations, and was not afraid of starting a fight when he found historic truth twisted to fit respectable traditions.

Piaget's mother, Rebecca Jackson, attributed her son's interest in sciences as something he picked up as a child, on his own. According to her, by the age of 10, Piaget was a precocious child who developed an interest in biology and the natural world⁵. By the age of 15 years, Piaget became famous in the field of zoology. Smith notes that Piaget's interest for mollusks was developed during his late adolescence to the point that he became a well-known malacologist by the time he finished school⁶. After his school, Piaget proceeded to study natural science at the

⁴ Leslie Smith, *Jean Piaget Archives*. [Online] Available at: <www.unige.ch/piaget> [Accessed 18th October 2023].

⁵ Leslie Smith, *Jean Piaget Archives*. [Online] Available at: <www.unige.ch/piaget> [Accessed 18th October 2023].

⁶ Leslie Smith, Jean Piaget in N. Sheehy, A. Chapman. W. Conroy (eds). *Biographical dictionary of psychology*. (London: Routledge, 1997).

University of Neuchâtel and graduated with a doctorate degree in 1918.

Piaget became famous and worked at different departments and in different places. In 1921, he was the director of studies at the J. J. Rousseau Institute at Geneva; chair of psychology, sociology and history of science at Neuchâtel from 1925 to 1929; history of scientific thinking at Geneva from 1929 to 1939; the international Bureau of Education from 1929 to 1967; psychology and sociology at Lausanne from 1938 to 1951; sociology at Geneva from 1939 to 1952; and genetic and experimental psychology from 1940 to 1971. Piaget was professor emeritus of the University of Geneva from 1971 to 1980 and he created and directed the International Centre for Genetic Epistemology (ICGE), till his death in 1980.

Piaget's Theory of Cognitive Development

The term 'cognitive' originate from the Latin word *cognoscere*, meaning 'to know'. Oakley⁷ describes cognitive as activities that "include all the psychological processes and activities involved in thinking and knowing. These include how information is acquired, processed and organised". Cognitive development therefore, can be seen as "a study of how these processes develop in children and young people, and how they become more efficient and effective in their understanding of the world and in their mental processes"⁸.

⁷ Lisa Oakley, *Piaget's Theory of Cognitive Development*. (USA: Luxottica Group, 2004), 2

⁸ Lisa Oakley, *Piaget's Theory of Cognitive Development*. (2004), 2

According to Smith⁹, Piaget was the first psychologist to make a systematic study of cognitive development. His contributions include a theory of cognitive child development, detailed observational studies of cognition in children, and a series of simple but ingenious tests to reveal different cognitive abilities. According to Piaget's theory of cognitive development as noted by Oakley, children are born with a very basic mental structure that is genetically inherited and evolving, on which all subsequent learning and knowledge is based. Piaget denied the assertion that "adults...simply know more than children, but that their knowledge was [is] structured differently"¹⁰. Slater and Bremner maintain that for Piaget, children at different stages of their development think and interpret their world in different ways. They hold that:

Children are active agents in shaping their own development, they are not simply blank slates who passively and unthinkingly respond to whatever the environment offers them. That is, children's behaviour and development are motivated largely *intrinsically* (internally) rather than *extrinsically*. For Piaget, children learn to adapt to their environments and as a result of their *cognitive adaptations* they become better able to understand their world. Adaptation is something that all living organisms have evolved to do and as children adapt, they gradually construct more advanced understandings of their worlds. These more advanced understanding of the world reflects themselves in

⁹ Leslie Smith. *Jean Piaget's Biography* [Online] Available at <<http://www.unige.ch/piaget/>> [Accessed 18th October 2023].

¹⁰ Lisa Oakley, *Piaget's Theory of Cognitive Development*. (2004), 13.

the appearance, during development, of new stages of development¹¹.

Piaget therefore, calls children 'little scientists' who engage in active exploration, seeking understanding and knowledge. They think in actions which later will go underground and become abstract thinking. Usha Goswami holds that for Piaget, children are like scientists because

they try out little by little action and thought experiments and thus actively construct knowledge about the world; in fact, the ideal endpoint of cognitive development is scientific thinking. In children's mundane behaviours, Piaget saw a remarkable underlying process of cognitive development at work¹².

In Piaget's view, says Goswami, the behaviours of children of moment-to-moment specific encounters with objects or people lead to general ways of understanding the world. However, this understanding changes because thinking processes develop as children pass through various stages from birth to maturity.

The Principles of Piaget's Theory

There are three basic components of Piaget's theory of cognitive development. These are: the schema, which is also known as the building blocks of knowledge; processes that enable the transition from one stage to another which are assimilation,

¹¹ Alan Slater and Gavin Bremner, *An Introduction to Developmental Psychology*. (2007), 42.

¹² Usha Goswami, Ed. *The Wiley-Blackwell Handbook of Childhood Cognitive Development*. 2nd Ed. UK: Blackwell Publishing Ltd., (2014), 649.

accommodation and equilibration; and stages of development, which include sensorimotor, preoperational, concrete operational and formal operational.

A. Schema

Piaget describes schema as a cognitive representation of activities or things. In other words, it is a "basic cognitive structure that individuals use to make sense of the world"¹³. According to Piaget, a schema includes both a category of knowledge and the process of obtaining that knowledge. For example, says Oakley¹⁴, when a baby is born it will have an innate schema for sucking in order to ensure that it can feed and therefore grow. As the baby grows this schema will become integrated with other feeding schemas as the baby's experience and nutrition changes. This is because the new information gathered through experience is used to modify the previous existing schema. The processes through which modification takes place is what Piaget calls assimilation and accommodation.

Processes of Cognitive Development

i. Assimilation: Piaget explains assimilation as "the process of putting new experience into already existing mental structure (schema)"¹⁵. In other words, it is the process of applying what one knows, of fitting reality into one's current cognitive organisation. Goswami maintains that assimilation happens when

¹³ Penney Upton, *Developmental Psychology: Psychology Express*. (England: Pearson Education Limited (2012), 129.

¹⁴ Oakley, *Piaget's Theory of Cognitive Development* (2004).

¹⁵ Oakley, *Piaget's Theory of Cognitive Development* (2004), 14.

children treat new objects, people and events as if they were familiar with them. That is, they assimilate the new reality with their already-existing schema of thought. Children develop cognitive structures to help them make sense of their world and when they encounter a new experience, they place this into the schemas they have already developed. For example, a child who has already developed the schema of sucking, when given a toy as a new reality, he or she will put it in his or her mouth to use the familiar sucking activity; or, "if a child's sole experience has been with small domestic animals such as dogs and cats, a child might believe that all animals are small, furry and walk on four legs"¹⁶.

ii. Accommodation: Slater and Bremner describe accommodation as a process whereby "individuals have to modify or change their schemas, or ways of behaving and thinking, in order to adjust to a new situation"¹⁷. Goswami also notes that accommodation occurs because "the current structures have failed to interpret a particular object or event satisfactorily"¹⁸. When this happens, there is therefore, a need to reorganise thoughts and interpretation of such an object or event that will lead to a different and more satisfactory assimilation. Piaget contends that as children grow and develop, they will encounter new experiences which their former schemas are not capable of explaining, unless they will develop a new schema to respond correctly to new experience. Take for example, a child

¹⁶ Penney Upton, *Developmental Psychology: Psychology Express* (2012), 12.

¹⁷ Alan Slater and Gavin Bremner, *An Introduction to Developmental Psychology*. 3rd Ed. (2007), 43.

¹⁸ Usha Goswami, Ed. *The Wiley-Blackwell Handbook of Childhood Cognitive Development*. 2nd Ed (2014), 653.

who has a schema of domestic animals like dogs and cats and believe that all animals are small, furry and walk on four legs; when he or she goes to the zoo and sees other animals that do not fit into his/her schema, he/she needs a new schema in order to assimilate the new experience.

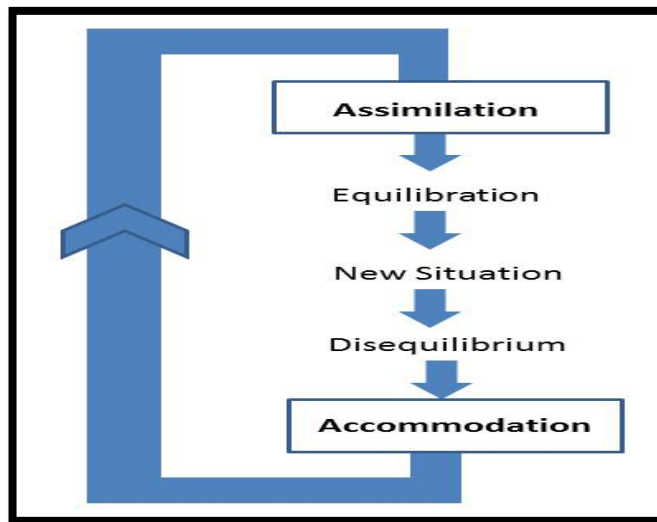
iii. Equilibration: This is the process of seeking to achieve cognitive stability through assimilation and accommodation. It acts as 'the force' between assimilation and accommodation that moves development along. In other words, equilibration is 'the force' which drives the learning process as people do not like to be frustrated and will seek to restore balance by mastering a new challenge. Oakley explains better how this 'force' works:

The child is constantly trying to interpret and understand the world while encountering new experiences. The child builds an understanding of the world and how it works, but this is constantly challenged by new experiences the conflict with their current understanding. They seek to develop schemas to help this interpretation process. The drive for equilibrium is that all these interpretations and schemas fit together and make a general picture of the world that is logical. However, equilibrium is a constantly changing thing, as each time a child encounters a new experience they are in a place of disequilibrium until assimilation or accommodation has taken place¹⁹.

¹⁹ Lisa Oakley, *Piaget's Theory of Cognitive Development*. (2004), 14-15.

Piaget believes that the work of equilibrium helps to bring cognitive development to a more advanced level, as children grow and move from one stage of development to another.

Below is the summary of Piaget's processes of cognitive development by McLeod²⁰.



C. Stages of Development

Having looked at the principles in Piaget's theory that constitute cognitive development, we now focus on his stages of development. Piaget outlines four stages of cognitive development and notes that as children develop and go through

²⁰ Saul McLeod, 2012. "*Jean Piaget*". [Online] Available at: <<http://www.simplypsychology.org/piaget.html>> [Accessed 23 October 2023].

the processes of assimilation and accommodation, "their brain will develop through the natural process of maturation, and therefore their understanding of the world matures and their ability to accurately interpret and predict the world develops"²¹. Piaget enumerates these stages of cognitive development as the sensorimotor stage of infant (from birth to 2 years), the pre-operational stage of early childhood (from 2 to 7 years), the concrete operations stage of middle childhood (from 7 to 11 years), and the former operations stage of adolescence and beyond (from 11 years and above).

i. The Sensorimotor Stage (from birth to 2 years): This period is not only the starting point of cognitive development but developmental psychologists in general see it not only as one of the most delicate but also dramatic and impressive areas of development in children. Oakley describes this stage and the child's development in the following words:

During this stage the child will change from a fairly helpless newborn baby to a walking, talking toddler. This stage is dominated by sensory and motor activity. The newborn baby is dependent upon the built-in schemas and reflexes, and is unable to imitate or integrate information. An example of a reflex is the sucking reflex, which is necessary for feeding and growing. As the child develops, their sensory and motor activities develop and increase, so that by the end of this stage they are able to imitate and integrate information to some degree²².

²¹ Lisa Oakley, *Piaget's Theory of Cognitive Development*. (2004), 12.

²² Lisa Oakley, *Piaget's Theory of Cognitive Development*. (2004), 16.

According to Piaget, what is vital for cognitive development of a child at this stage is 'object permanence'. This is because, Piaget believes that after eight months of birth, the first concept a child develops is that of an object and when it is permanently acquired, the child tends to look for the object if it is out of sight. But before the acquisition of the object permanence, the child does not look for an object if it is out of its visibility, because such an object does not exist.

ii. The Pre-operational Stage (from 2 to 7 years): This stage is characterised by the beginnings of logical reasoning and symbolic thinking in children, though they cannot yet perform mental operations like logical operation task. Goswami observes that cognitive development takes place here, by children using symbols such as mental images, words and gestures to represent objects and events. In other words, "they reconstruct the sensor motor concepts of objects, relations, causality, space, and time in a new medium (mental representation) and a more highly organised structure"²³. Piaget contends that the difficulty children at this age encounter is that they tend to limit their thinking due to what he calls 'egocentrism' and 'animism'. Egocentrism occurs when children do view the world only from their own perspective and reject other perspectives. Animism on the other hand, is whereby children tend to focus their attention solely on objects, particularly those that move and are active, such as wind, clouds and sometimes trees and similar objects²⁴. Piaget categorises

²³Usha Goswami, Ed., *The Wiley-Blackwell Handbook of Childhood Cognitive Development*. 2nd ed. (2014), 652.

²⁴ Kathleen Stassen Berger, *The Developing Person Through the Life Span*. 4th ed. New York: Worth Publishers, (1998).

children who fall under the limitations of egocentrism and animism as those between the ages of 2 to 4 years (the preconceptual period).

Children between the ages of 4 and 7 are said to be in the intuitive period. This is because their development is characterised by "the development of mental ordering and classification. It is intuitive because the child has no idea about concepts/principles that underlie the classification"²⁵. The problem of this sub-group of the pre-operational stage according to Piaget, is "lack of understanding of reversibility" or "conservation"²⁶. Oakley describes conservation as "the realisation that quantity or amount does not change when nothing has been added or taken away from an object or collection of objects, despite changes in form or partial arrangements"²⁷. Lack of understanding of reversibility among this group of children was found out through Piaget's tests of liquid, volume, mass, number, length and area. The tests discovered that children at this stage were not able to conserve.

iii. Concrete Operations Stage (from 7 to 11 years): Piaget explains the two terminologies - 'concrete' and 'operations' to help understand the cognitive development of children at this stage. Operations are the "development of strategies and rules for interpreting and investigating the child's world... Concrete refers to the child's ability to apply these strategies to things that are present...Thus the child can solve problems they can see or

²⁵ Lisa Oakley, *Piaget's Theory of Cognitive Development*. (2004), 19.

²⁶ Penney Upton, *Developmental Psychology: Psychology Express*. (2012), 131-132.

²⁷ Lisa Oakley, *Piaget's Theory of Cognitive Development*. (2004), 19.

manipulate"²⁸. According to Goswami, children at this stage develop structures which permit them to "perform various mental operations, which are internalised actions that can be reversed"²⁹. Thinking now, says Goswami, is more flexible and abstract. Actions now which are still the main source of knowledge become mental actions. Logic, Goswami writes, "dominates over perceptions, such that children understand that quantities stay the same even though they change their appearance"³⁰. However, the main limitation of children at this stage is in the realm of possibilities. This is because their reasoning at this stage is still limited. Upton³¹ maintains that although, children at concrete operational stage "can reason logically and understand causal relationships, they can only do so if that reasoning is tied to specific concrete examples; they cannot yet engage in hypothetical or abstract reasoning".

iv. The Formal Operational Stage (from 11 years and above):

Piaget also calls this stage 'maturation period'. It is a period of cognitive development in adolescence, characterised by hypothetical deductive reasoning (a reasoning that uses deductive logic) and systematic problem-solving. Slater and Bremner³² hold that the adolescent at this stage "becomes able to reason in the way that scientists do - to manipulate variables to find out

²⁸ Lisa Oakley, *Piaget's Theory of Cognitive Development*. (2004), 22.

²⁹ Usha Goswami, Ed., *The Wiley-Blackwell Handbook of Childhood Cognitive Development*. 2nd ed. (2014), 652.

³⁰ Usha Goswami, Ed., *The Wiley-Blackwell Handbook of Childhood Cognitive Development*. 2nd ed. (2014), 652

³¹ Penney Upton, *Developmental Psychology: Psychology Express*. (2012), 134.

³² Slater and Bremner (2007), 46.

what causes things to happen - and is also introduced to the realm of possibilities and hypothetical thought". In other words,

their mental operations now can be applied not only to concrete objects but also to purely verbal or logical statements, to the possible as well as the real, to the future as well as the present. Children take the results of concrete operations and generate hypotheses (propositions, statements) about their logical relations. Thus, they have operations on operations; thought has become truly logical, abstract, and hypothetical. The essence of formal operational thought is the *scientific method*. Children formulate a hypothesis and test it. They can imagine all possible outcomes and generate all possible combinations to test.³³

Summary of Piaget's Stages of Cognitive Development by McLeod³⁴.

Stage of Development	Key Feature	Research Study
<u>Sensorimotor</u> 0 - 2 yrs.	Object Permanence	Blanket & Ball Study
<u>Preoperational</u> 2 - 7 yrs.	Egocentrism	Three Mountains

³³ Usha Goswami, (2014), 652.

³⁴ Saul McLeod, 2012. "*Jean Piaget*", [Online] Available at: <<http://www.simplypsychology.org/piaget.html>> [Accessed 23 October 2023].

<u>Concrete Operational</u> 7 – 11 yrs.	Conservation	Conservation of Number
<u>Formal Operational</u> 11yrs +	Manipulate ideas in head, e.g., Abstract Reasoning	Pendulum Task

According to McLeod, Piaget believes that all children go through the four stages of development in the same order, and no stage can be missed out - although some individuals may never attain the later stages. There are individual differences in the rate at which children progress through stages. For Piaget, says McLeod³⁵, all stages are vital. No stage is more important than the others and although, descriptions of the stages often include an indication of the age at which the average child would reach each stage, this does not necessary imply that reaching a certain age determines a particular stage. Piaget believes that his stages of cognitive development are universal and the same sequence of development occurs in children all over the world, whatever their cultural background.

Critical Evaluation of Piaget's Theory of Cognitive Development

Jean Piaget's theory we have considered can be said to have a comprehensive and detailed analyses and explanation of cognitive development from the time of birth to adulthood of

³⁵ Saul McLeod “*Jean Piaget*, (2012).

human beings. In spite of how sound and convincing Piaget's theory of cognitive development seems to appear, it has received a lot of criticisms. It has been argued that Piaget's concept of the schema is not only incompatible with the theories of development like behaviourism, but since the schema is an internal process it cannot be directly observed. Therefore, Piaget's theory of the schema cannot be objectively measured and scientifically proven³⁶.

Another criticism concerns Piaget's stages of development. Some developmental psychologists, who see development as continuous process till death, question not only the age range of the stages, but have argued that some studies have shown that only one-third of adults ever reach the formal operational stage. Goswami gives refined analyses of the possible nature of development:

The acquisition of each stage is an extended process, including an initial period of preparation during which the stage is somewhat unstable and a final period of maturity and stability that may come only after that stage has officially ended. Until this final point, the cognitive items may not become concordant, tightly organised, and interrelated into a true stage. Concepts or structures that characterise a stage are often only roughly synchronous in their development. For example, two concepts might begin and end their development at the same time but complete it at different times. Or they might begin and end their development at different times but have considerable temporal overlap.

³⁶ Saul McLeod, (2012).

Finally, there may be more stage-like consistency in some cognitive domains than in others³⁷.

This means that Piaget would have not concentrated solely on logical structuring of the stages of development, but other areas of cognitive developments such as information-processing. Goswami argues bluntly that:

Research did not support the claim that children acquire concepts and broad conceptual structures that apply to all content areas. Instead, a child often performed at different cognitive levels on tasks that supposedly tapped the same stage. Moreover, a concept often was demonstrated earlier with simpler task demands than with more complex ones, and earlier in areas in which children had a great deal of experience and knowledge than in less familiar ones. For example, infants were more likely to demonstrate the concept of object permanence when the object was the mother than when it was a physical object... Given these consistencies, researchers asked whether the mind is less a coherent cognitive system than a collection of different and unrelated mind sets...devoted to different contents. It seemed more accurate to depict cognition as concepts and related clusters of concepts that pertained to a particular domain, such as math, space, or quantity, rather than as a series of general stages³⁸.

According to cross-cultural psychologists like John Barry, Ype Poortinga, Seger Breugelmans, Athanasios Chasiotis and David

³⁷ Usha Goswami (2014), 654.

³⁸ Usha Goswami (2012), 540.

L. Sam³⁹, Piaget’s methods of observations and clinical interviews are open to biased interpretation. This is because Piaget conducted the observations alone and data collections are based on his own subjective interpretation of events. Moreover, he concentrated on the universal stages of cognitive development and biological maturation, and failed to consider the effect that the social setting and culture may have on cognitive development. It would have been more reliable if Piaget conducted the observations with other researchers and compared the results afterwards to check if they are similar. Moreover, at the early stage of his research, Piaget carried out his studies with a small sample size, basically using his own children from Switzerland. This sample is biased, and accordingly the results of these studies cannot be generalized to children from different cultural backgrounds.

However, some development psychologists such as Patrick Miller⁴⁰, David Shaffer and Katherine Kipp⁴¹ hold that though Piaget’s theory is limited in some ways, it is relevant in many respects. For example, they contend that it is not only the first theory of cognitive development, but it has contributed enormously in the field of developmental psychology. He changed how people viewed children’s world and their methods

³⁹ John W. Barry, Ype H. Poortinga, Seger M. Breugelmans, Athanasios Chasiotis and David L. Sam. *Cross-Cultural Psychology: Research and Application*. 3rd ed. Cambridge: University Press. (2012), 36.

⁴⁰ Patrick Miller, *Piaget’s Theory: Past, Present, and Future*. In U. Goswami (Ed.), *The Wiley-Blackwell Handbook of Childhood Cognitive Development* (pp. 649 – 672). Wiley Blackwell, (2011).

⁴¹ David Reed Shaffer and Katherine Kipp, *Developmental Psychology: Childhood and Adolescence*. 7th Ed. USA: Wadsworth, (2010).

of studying children. Piaget's theory has been of practical use in understanding and communicating with children, particularly in the field of education. More importantly still, Piaget's works have generated a huge number of researches from different people, over the last few decades, which have increased the understanding of cognitive development.

The Relevance of Piaget's Theory to Formation of Candidates in Formation

According to Michael Hogg and Graham Voughan⁴², theories, especially scientific ones, by nature are abstract and vary in the extent to which they have been conceptually developed and empirically tested. However, their broad application in concrete situations today is what many people set out to look for in theories. In other words, theories cannot only be said to present coherent and logical sets of interrelated concepts, definitions and propositions that explain events or situations; but most importantly, how these theories can be applied in concrete terms. Cognitive development theories in particular and developmental theories in general, aim not only at explaining the growth and developmental processes in human beings, but if they are applied in concrete situations, such theories will enhance healthy growth and development in different areas and make human life flourishing.

⁴² Michael A. Hogg and Graham M. Vough. *Social Psychology*. 3rd ed. Harlow: Pearson Education Limited (2002).

The application of Piaget's theory of cognitive development we have considered above to the formation of candidates in initial formation is important in many respects. The aim of the Spiritan formation in particular and the Church at large, is a quality formation with a holistic approach. This theory, though limited, can serve in some way as a foundation and framework for both formators and candidates to achieve this aim. In other words, formators can use this theory to help candidates grow, develop and mature intellectually, psychologically, spiritually and morally, and be of good use and service to themselves, to the Congregation, to the Church and to the world at large. Let us consider the three different components of this theory in relation to formation.

The Schema, Processes of Cognition and Formation

Piaget's theory is valuable in the field of education of both children and other groups of people. As mentioned earlier, it has not just changed how people viewed children's world and their methods of learning, but has also created 'child-centred learning' or 'learner-based learning' approaches in education. According to Shaffer and Kipp, before Piaget's theory, a teacher was seen as someone whose duty is solely to impart knowledge, and children or learners were seen as only passive recipients of this knowledge. Piaget's theory proved this assumption wrong and established that by nature, children are born with a **schema** - "a pattern of thought or action [which] is simply viewed as some

enduring knowledge base by which children interpret their world"⁴³.

Piaget held that through the process of **organisation**, children combine existing schemes into new and more complex intellectual schemes. The processes of **assimilation**, which is putting new experience into already existing mental structure and **accommodation**, whereby individuals have to modify or change their schemas, or ways of behaving and thinking, in order to adjust to a new situation, with **equilibration** acting as cognitive stability between assimilation and accommodation; children **adapt** or **adjust** to the demands of the environment⁴⁴. These processes do not only help children to adapt to the demands of the new environment, but most importantly, it helps them to move from one stage of cognitive development to another.

These three components of Piaget's theory though focused on children, can be applied to the cognitive development of other groups of people such as candidates in formation of the Spiritans. The age range of this group of people is between 18 and 35 years and in some cases 40 years. In other words, it is a formation that focuses on the training, growth and development of adolescents and adults.

Candidates who have just been admitted, for example, in the formation programme of the Spiritans are like 'new born babies' in the world, in this case the 'world of formation'. Like 'little scientists' of Piaget, the newly admitted candidates (mostly

⁴³ David Reed Shaffer and Katherine Kipp, *Developmental Psychology: Childhood and Adolescence*. 7th ed. USA: Wadsworth, (2010), 251.

⁴⁴ David Reed Shaffer and Katherine Kipp, (2010).

adolescents) have already existing schemes and as adolescents, their cognitive abilities are not only high but increasingly aware of their new schemes and they are also "increasingly aware of both world concerns and personal needs - others' as well as their own - and they are also more adultlike in their use of analysis, logic, and reason"⁴⁵. Formation programme is one of the new schemes candidates at this stage have encountered. They already have mental structures about God, the Church, religious life and priesthood. This is because *Pastores Dabo Vobis* (PDV)⁴⁶, as also cited in Azenda Ikyegh⁴⁷, states that some of the criteria for admission of candidates to religious life and priesthood should include: "right intention..., sufficiently broad knowledge of the doctrine of the faith, some introduction to the methods of prayer, and behaviour in conformity with Christian tradition". United States Conference of Catholic Bishops (USCCB)⁴⁸ advises that those charged with the responsibility of admission of candidates to religious life and priesthood should ensure that such candidates have some level of intellectual, affective, spiritual and pastoral formation. Equally, Guide for Spiritan Formation (GSF)⁴⁹ also states the criteria for admission of candidates into the

⁴⁵Kathleen Stassen Berger, *The Developing Person Through the Life Span*. (4th ed.). New York: Worth Publishers, (1998), 411.

⁴⁶ Vatican, *Pastores Dabo Vobis* (PDV): *Post-Synodal Apostolic Exhortation on the Formation of Priests in the Circumstances of the Present Day*. Rome: Vatican Publications, (2006), 62.

⁴⁷ Azenda Ikyegh, *Assessment, Evaluation and Accompaniment of Initial Formation of the Spiritan within Anglophone*. Enugu: Kingsley's Publication, (2019), 140.

⁴⁸ USCCB, *Programme of Priestly Formation*. 5th ed. Washington, D.C. (2006).

⁴⁹ Spiritans, *Guide for Spiritan Formation (GSF): "Until Christ be formed in you" (Gal. 4:19)*. Rome: The Generalate, (2013), 47.1 - 47.6.

Congregation of the Holy Spirit (Spiritans). This means that the work of formators, then, is to 'accompany' and help candidates at this point to organise and combine their existing schemes into new formation programme schemes, through the processes of assimilation and accommodation in order to 'adjust' and 'adapt' to the demands of the formation programme.

Piaget's Stages of Cognitive Development and Formation

Piaget outlines four main stages of cognitive development in children as indicated above (the sensorimotor, the preoperational, the concrete operations, and the formal operations). According to Piaget, these stages of intellectual growth represent qualitatively different levels of functioning and form what he calls an "inherent development sequence"; which means that "all children progress through the stages in the same order", and argues that these "stages can never be skipped because each successive stage builds on the accomplishments of previous stages"⁵⁰. One of the reasons for the identification of Piaget's stages of cognitive development is to understand how children develop and go through processes of maturation from one stage to another which eventually helps them to understand and accurately interpret and predict the world around them and adapt to their environment.

The aims and objectives of the initial formation of the Church and of the Spiritans are the same. For example, the different stages of formation of the Spiritans are to help candidates to develop, grow

⁵⁰ David Reed Shaffer and Katherine Kipp, *Developmental Psychology: Childhood and Adolescence*. 7th ed., (2010), 253.

and become mature in the four principal areas of formation which are affective, intellectual, spiritual and pastoral; and religious apostolic way of life of the Spiritans as they move from one stage to another and eventually arrive at acceptable level of maturity when they are finally professed, ordained and sent to minister to different parts of the world.

There are five main different stages of Spiritan formation. These are: Postulancy, Philosophy, Novitiate, Prefecting (Period of Missionary Experience PME) and Theology.

Postulancy Stage: This stage is the first for the formation programme of the Spiritans. It lasts between six months and one year. The main aims and objectives of this stage are to introduce candidates to four areas of formation: human, spiritual, intellectual and pastoral, as well as to the religious-apostolic way of life of the Spiritans⁵¹. The GSF states that the content of this programme includes:

an introduction to the spiritual life [which] will awaken in the candidate a personal relationship with Jesus Christ... a basic knowledge of the history of the Congregation, of its current commitments and its religious and missionary life... an introduction to the study of scripture, theology and liturgy so that they are better equipped to benefit from the next stage.⁵²

The GSF maintains that at the end of the year, candidates are expected to have a good foundation and balanced spiritual life, a

⁵¹ Spiritans, *Guide for Spiritan Formation (GSF)*. (2013), 49.

⁵² Spiritans, *GSF*. (2013), 51.

balanced psycho-sexual life, a healthy sense of judgment and the necessary human and spiritual qualities to live their personal and social life, a sense and taste for religious and community life, sufficient knowledge and understanding of the basic elements of the faith, and some experience of pastoral work.

Philosophy Stage: The duration for philosophical studies is between two and four years. The study of philosophy is a vital stage to the formation of candidates to religious life and priesthood. The philosophical disciplines of the Spiritans are taught in line with the guidelines of the Church as stated in the Canon Law⁵³ and *Optatam Totius* (OT)⁵⁴. The aims and objectives of this stage are to “help candidates to understand the doctrine of the Church, make it fruitful for their lives, and be able to face the problems of their world. Such understanding will lay a good foundation for the study of theology”⁵⁵. In other words, “seminarians are to study not only for their own personal development and understanding of Church teachings but also for others, so that they can communicate and minister in the embodied service of the world”⁵⁶.

Novitiate Stage: The formation programme at this stage is one year. The Novitiate stage focuses on creating an environment for

⁵³ Vatican, *The Code of Canon Law*. London: Collins Liturgical Publications, (2001), 251.

⁵⁴ Vatican, *Optatam Totius* (OT): *Decree on Priestly Training*. Rome: Vatican Publications, (1965), 15.

⁵⁵ Azenda Ikyegh, *Assessment, Evaluation and Accompaniment of Initial Formation of the Spiritans in Anglophone West African Context*. (2019), 75.

⁵⁶ Maryanne Confoy, *Religious Life and Priesthood: Perfectae Caritatis, Optatam Totius, Presbyterorum Ordinis*. New York: Paulist Press, (2008), 119.

candidates to be attentive to the Holy Spirit, deepen their sense of vocation, help them to bring structure into their spiritual life, understand more clearly what God asks of them, and to be initiated into the Spiritan way of life and formation for it⁵⁷.

According to the GSF⁵⁸ the programme of this year is organized in the areas of: Spiritan rule of life; history of the congregation; religious life (chastity, poverty and obedience); human development; community life; engagement in pastoral work according to what is available in the local context and the study of cultures and languages. Other areas include Scripture, Eucharist, personal and community prayer, spiritual direction and accompaniment, counselling and psychotherapy, retreats and days of recollection, and devotions⁵⁹.

It is expected that this programme will help candidates to have a profound experience of real human and spiritual growth, self-awareness, self-acceptance and self-worth, including knowing one’s qualities and acceptance of weaknesses and any interior hurts, taste for personal prayer, personal relationship with Christ and capacity to live a certain solitude and in silence. It is also expected that at this stage, a candidate will have a clear idea whether or not he is called to a religious-apostolic way of life of the Spiritans

⁵⁷ Spiritans, *Spiritan Rule of Life*. 3rd ed. Rome: Congregation of the Holy Spirit, (2005), 110.

⁵⁸ Spiritans, *GSF*. (2013), 6

⁵⁹ USCCB, *Programme of Priestly Formation*. 5th ed., USA: Washington DC, (2006), 110.

The Stage or Period of Missionary Experience (PME): This is another important stage in the Spiritan formation process. It is a period when candidates are invited to enter into a “concrete experience of the characteristics of contemporary missionary life”⁶⁰. The aims and objectives of this stage as outlined in GSF are: to help candidates to have a more active Spiritan apostolic community life; take part in the ministry of a pastoral team and take on a responsibility which is clearly defined and suitable to the capacities of the individual; discover the values and demands made by engaging in an inter-cultural encounter and apostolate; and to be more committed to the poor and an awareness and attentiveness to questions of Justice, Peace, and Integrity of Creation (JPIC)⁶¹.

Theology Stage: The duration for this stage is three to four years and it is the last stage of the formation programme of the Spiritans. According to Azenda Ikyegh⁶², it is a vital stage because it is the last stage in the initial formation of the Spiritans, and the training is done specifically in the context of priestly ministry in the Catholic Church. The theological disciplines are taught according to the guidelines of the Church. The degree of competency and knowledge of Church doctrine and practice needed for candidates after the completion of their theological formation are expected to be fully matured in the four major areas of formation and religious apostolic way of life of the Spiritans.

⁶⁰ Spiritans, *The General Chapter 1998 Maynooth - Ireland: Launch out into the Deep (Luke 5: 4)*. Rome: The Generalate, (1998), 2.25.

⁶¹ Spiritans, *GSF*. (2012), 69.

⁶² Azenda Ikeygh, *Assessment, Evaluation and Accompaniment of Initial Formation of the Spiritans in Anglophone West African Context*. (2019), 77.

Candidates who meet the above qualifications are ordained and sent to minister to the Church and the world.

These stages of formation, though related, are different and they are in ascending order. Like Piaget's stages of development, one is not to be jumped in order to arrive at a well matured and developed person from one stage to another, which is also the aim and objectives of the formation programme of the Spiritans.

Conclusion

The title of this article is: “The Relevance of Jean Piaget’s Theory of Cognitive Development to Formation.” From the exposition of the theory, we have seen that it has three basic components: the schema, which is the basic cognitive structure individuals use to make sense of the world; the processes of assimilation and accommodation, which functions as the modification of new information an individual acquired through experience of previous existing schemas, with equilibrium acting as a mechanism to strike a balance between the processes.

The stages of cognitive development (the sensorimotor, the pre-operational, the concrete operational and the formal operational) form the third component of the theory. In the sensorimotor stage, the object permanence, which is the knowledge that an object is permanently present even when it is out of sight, acts as a key factor at this stage of development. At the pre-operational stage, 'egocentrism' and 'animism' play a key role in determining cognitive development in human beings. Egocentrism is where a child views the world only from his/her own perspective and

animism being the tendency to attribute feelings and intentions to inanimate objects. Due to these limitations, a child encounters the limitation of conservation. The problem of conservation is overcome in the concrete operational stage. A child forms inductive logic and begins to use his own experience to develop principles/rules to solve problems. Egocentrism also diminishes considerably. At formal operational stage, a child has reached maturation. S/he has developed hypothetical deductive reasoning and systematic problem-solving mechanisms with which s/he can live and function effectively in the world.

We have seen how Piaget's theory of cognitive development has received negative and positive comments from some developmental psychologists and other fields. For example, on the negative side, people like Usha Goswami, Soul McLeod, Michael Hogg and Graham Vaughan argue that Piaget's theory is limited in many respects, for example, in terms of its lack of incompatibility with other theories of development, observation, measurement and scientific evidence; Piaget's stages of development are limited because human development is seen as continuous process till death and not half way as his theory suggests. The theory does not also take into cognisance other areas of cognitive development such as information-processing, family background, social setting and culture where a child comes from and hence, it cannot be generalized to children from different cultural backgrounds.

That notwithstanding, some developmental psychologists such as Patrick Miller, David Shaffer and Katherine Kipp still hold that Piaget's theory is vital to developmental psychology in particular

and education in general. That this theory has contributed immensely to the understanding, communication and education of children ever since before the advent of it. Thus, it has changed how people viewed children's world and their methods of studying children. Moreso, that the theory is valuable because it has not only generated a huge number of researches over the years, but different people in different fields have practically used it on other groups of people and have achieved their aims and objectives of such groups, in terms of cognitive and human development.

This write-up cannot claim to exhaust all the analyses of Piaget's theory in relation to formation, however, from what has been said above, we can say that this theory is very much relevant to the formation of candidates to religious life and priesthood in the Church and in the Spiritan Congregation, if the SRL, GSF and other Church documents on formation are used in collaboration with it. Both SRL, GSF, Bagamoyo I⁶³ and Bagamoyo II⁶⁴ clearly state that formators and candidates need to work together to make the aim and objectives of the formation process of the Spiritans a reality. If the Spiritans' documents on formation, in conjunction with this theory are put in use, the aim and objectives of Spiritan formation will be achieved. For example, while candidates on one hand are "cognitively ready to learn new concepts" or schemes of the major areas of formation and religious apostolic life of the Spiritans at different stages;

⁶³ Spiritans, *The 20th General Chapter 2012 - Bagamoyo, Tanzania: Be Fervent in the Spirit (Rom. 12: 11)*. Rome: Generalate. (2012).

⁶⁴ Spiritans, *The 21st General Chapter 2021 – Bagamoyo, Tanzania: Behold, I am Doing Something New (Is. 43: 19)*. Rome: The Generalate, (2021).

formators on the other hand, need to "initiate and determine the activities [and] create...situations [in line with the formation programme of each stage] in which [candidates] can learn"⁶⁵, through the processes of organisation, assimilation, accommodation and adaptation.

If a 'good model' of formation and quality accompaniment with the aid of Piaget's theory are applied in the formation programme of the Spiritans, even the problems or limitations of what Piaget calls 'egocentrism', 'animalism' and 'conservation' will, to some extent, be eliminated in candidates before they finish the final stage of their formation. In other words, if these elements are properly and correctly used in formation, candidates will be able to view the world in a wider perspective and accept their limitations and shortcomings in order to grow. This in turn, will form their inductive and deductive logic and begin to use their experience of formation process to develop principles/rules to solve their own problems and the problems of the world. In other words, they will develop good and mature reasoning and systematic problem-solving mechanisms with which they can live and minister effectively in the Church and in our world that is rapidly changing and developing.

⁶⁵Lisa Oakley, (2004), 31.