

"The Enduring Legacy of Jean Piaget (1896-1980): Pioneering Cognitive Development and Shaping Modern Psychology and Education"

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Jean Piaget (1896-1980) Life Sketch

Jean Piaget (1896-1980) was a Swiss psychologist known for his groundbreaking work in the field of developmental psychology and cognitive theory. Here's a brief life sketch of Jean Piaget:

> Early Life:

Jean William Fritz Piaget was born on August 9, 1896, in Neuchâtel, Switzerland.

He showed an early interest in biology and the natural world, publishing his first scientific paper at the age of 10.

Education and Academic Career:

- Piaget studied at the University of Neuchâtel, where he earned a Ph.D. in natural sciences at the age of 22.
- He later studied psychology in Zurich with Carl Jung and Eugen Bleuler.
- Piaget worked at Alfred Binet's laboratory in Paris, where he became interested in intelligence testing in children.
- He developed an interest in child psychology and began observing and interviewing children to study their thought processes and cognitive development.

Cognitive Development Theory:

Piaget's research led to the development of his theory of cognitive development, which posits that children go through distinct stages of intellectual growth, each characterized by different ways of thinking and understanding the world.

He identified four major stages of cognitive development: sensorimotor, preoperational, concrete operational, and formal operational, each with its own unique cognitive abilities and limitations.

Contributions and Legacy:

Piaget's work had a profound influence on the fields of psychology, education, and philosophy.

He emphasized the importance of active learning and exploration in a child's development.

Piaget's ideas laid the foundation for constructivist theories of learning, which emphasize the role of the learner in actively constructing knowledge.

His research also inspired the field of genetic epistemology, the study of the development of knowledge.

Later Life and Death:

In his later years, Piaget continued his research and writing, expanding his theories and publishing numerous books and articles.

He passed away on September 16, 1980, in Geneva, Switzerland, but his work continues to shape the study of human development and education.

Jean Piaget's legacy endures through the ongoing impact of his theories and research on the understanding of cognitive development in children. His work remains foundational in the study of child psychology and education.

Jean Piaget's education and profession were deeply intertwined with his contributions to the fields of psychology, education, and child development:

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• Education:

- **Early Education:** Piaget was an exceptionally precocious child with a keen interest in natural sciences. He published his first scientific paper at the age of 10.
- University Studies: He studied zoology and philosophy at the University of Neuchâtel, Switzerland, earning a Ph.D. in natural sciences in 1918 at the age of 22. His doctoral thesis focused on mollusks.
- **Doctoral Research:** During his doctoral studies, Piaget developed a keen interest in psychology and began working on the psychological development of children. His interest in children's thinking processes led him to Paris, where he worked with Alfred Binet, the renowned psychologist known for his work in intelligence testing.
- > Professional Career:
- **Early Career:** After obtaining his Ph.D., Piaget worked in various capacities, including as a researcher at a psychological institute in Paris. Here, he conducted extensive research on children's cognitive development and intelligence testing.
- **Director of Jean-Jacques Rousseau Institute:** In 1929, Piaget returned to Switzerland and became the director of the International Bureau of Education. He also took charge of the Jean-Jacques Rousseau Institute in Geneva, which was dedicated to the study of child development.
- **Research and Publications:** Piaget's seminal work during this period led to the publication of many influential books and papers. Notably, he published his landmark book "The Language and Thought of the Child" in 1923, outlining his early findings on children's cognitive development.
- **Professorship:** Piaget held various academic positions, including the Director of the International Bureau of Education and professorships at the University of Geneva and the Sorbonne in Paris. His academic roles allowed him to continue his research and contribute significantly to the understanding of cognitive development in children.
- Legacy: Throughout his career, Piaget's work laid the foundation for the field of developmental psychology and constructivist education. He established the Center for

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Genetic Epistemology in Geneva, where he and his collaborators continued their research.

Jean Piaget's educational background in natural sciences, combined with his passion for understanding human cognition, led him to a distinguished career as a psychologist, researcher, and educator. His theories and research profoundly influenced the fields of psychology, education, and philosophy, shaping the way we understand how children learn and develop cognitively.

Piaget's Career and Theories

Piaget had several ideas or theories about cognitive development throughout his career.

Intellectual Development

Piaget developed an interest in psychoanalysis and spent a year working at a boys' institution created by Alfred Binet. Binet is known as the developer of the world's first intelligence test, and Piaget took part in scoring these assessments.

> Roots of Knowledge

Piaget identified himself as a genetic epistemologist. In his paper Genetic Epistemology, Piaget explained, "What the genetic epistemology proposes is discovering the roots of the different varieties of knowledge, since its elementary forms, following to the next levels, including also the scientific knowledge."

His early work with Binet's intelligence tests led Piaget to conclude that children think differently than adults. While this is a widely accepted notion today, it was considered revolutionary at the time. It was this observation that inspired his interest in understanding how knowledge grows throughout childhood.

Schemas

Piaget suggested that children sort the knowledge they acquire through their experiences and interactions into groupings known as schemas. When new information is acquired, it can either

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be assimilated into existing schemas or accommodated through revising an existing schema or creating an entirely new category of information.

Stages of Cognitive Development

Today, Jean Piaget is best known for his research on children's cognitive development. Piaget studied the intellectual development of his own three children and created a theory that described the stages that children pass through in the development of intelligence and formal thought processes.

The four stages of Piaget's theory are as follows:

- Sensor motor stage: The first stage of development lasts from birth to approximately age 2. At this point in development, children know the world primarily through their senses and movements.
- **Preoperational stage:** The second stage of development lasts from the ages of 2 to 7 and is characterized by the development of language and the emergence of symbolic play.
- **Concrete operational stage:** The third stage of cognitive development lasts from the age of 7 to approximately age 11. At this point, logical thought emerges, but children still struggle with abstract and theoretical thinking.
- Formal operational stage: In the fourth and final stage of cognitive development, lasting from age 12 and into adulthood, children become much more adept at abstract thought and deductive reasoning.
- Piaget's Contributions to Psychology

Jean Piaget, a pioneering Swiss psychologist, made significant contributions to the field of developmental psychology, particularly in understanding the cognitive development of children. His developmental theories often referred to as Piaget's stages of cognitive development, have had a profound influence on psychology, education, and related disciplines. Piaget's theories are characterized by distinct stages that outline the progression of a child's cognitive abilities and understanding of the world. Here is an overview of Piaget's stages of cognitive development:

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1. Sensor motor Stage (Birth to 2 years):

Key Characteristics: Infants explore the world through sensory experiences and motor activities.

Major Achievements: Object permanence (understanding that objects continue to exist even when out of sight), basic motor skills development, and early language acquisition.

2. Preoperational Stage (2 to 7 years):

Key Characteristics: Children start to use language and mental imagery, but thinking is egocentric (focused on oneself) and lacks logical reasoning.

Major Achievements: Symbolic thinking, imaginative play, and the use of symbols and language to represent objects and ideas.

3. Concrete Operational Stage (7 to 11 years):

Key Characteristics: Children develop logical thinking, but it is limited to concrete, tangible situations. Abstract and hypothetical reasoning are still challenging.

Major Achievements: Conservation (understanding that quantity remains the same despite changes in appearance), improved problem-solving abilities, and better understanding of cause and effect.

4. Formal Operational Stage (11 years and older):

Key Characteristics: Adolescents and adults can think abstractly, reason hypothetically, and consider multiple perspectives.

Major Achievements: Abstract thinking, hypothetical-deductive reasoning, and the ability to understand complex concepts and moral reasoning.

Key Concepts in Piaget's Theory:

Assimilation: Incorporating new information into existing cognitive schemas.

Accommodation: Modifying existing schemas to incorporate new information.

Equilibration: The process of balancing assimilation and accommodation to create stable understanding.

Critiques and Limitations:

Piaget's stages are seen as somewhat rigid, with individual variation in cognitive development not fully accounted for.

Cultural and social influences on cognitive development were not extensively explored in Piaget's original work.

Recent research has highlighted that children might acquire certain skills earlier than Piaget proposed, challenging the fixed age ranges for each stage.

Despite these limitations, Piaget's theories remain foundational in developmental psychology and have influenced education and child-rearing practices worldwide. Researchers continue to build on Piaget's work, incorporating cultural and social factors to create a more comprehensive understanding of cognitive development in children.

Piaget contributed to psychology in various ways. He provided support for the idea that children think differently than adults and his research identified several important milestones in the mental development of children. His work also generated interest in cognitive and developmental psychology.

Piaget's theories are widely studied today by students of both psychology and education. In the case of the latter, he once said, "The principle goal of education in the schools should be creating men and women who are capable of doing new things, not simply repeating what other generations have done."

Although there is a decline in the supportive research of Piaget's theory, it is possible to regard his theory as a main subject of research in child and cognitive development because his theories

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represent a rich source of research, and it has controlled developmental literature. There is a large number of contributions that Piaget's perspective made to provide child psychology. According to Flavell (1996, p.200), a founding cognitive field might be regarded as one of the most important contributions of Piaget and his works in this field which has led to a new vision of childhood. Furthermore, another contribution of Piaget could be linked to the way children think because his role in this area is clear and it is possible to consider him as a discoverer of children thinking at different ages. A good illustration of this is his ideas about infants because he assumes that infants think that objects are not permanent (Miller, 2011, p.75). Moreover, nowadays there are focuses on some models of cognitive development that have been created by Piaget such as the assimilation-accommodation model because through this model it is possible to observe cognitive growth as a sequence process (Flavell, 1996, p.200). All these facts indicate that Piaget's theories have played vital roles in modern psychology. It is possible to consider Piaget as a pioneer in psychology because he took a different way to explain cognitive development processes. A clear example of this is reflected in his contribution to identifying the motivation of cognitive behavior in childhood. His theory helped to adopt the idea that the motivation for this type of behavior is intrinsic (Flavell, 1996, p.200). Another good illustration of his role could be found in his explanation of cognitive development processes when he assumes that these processes are made through three main steps: cognitive balance at small developmental levels, cognitive disequilibrium, and cognitive balance at high developmental levels (Flavell, 1996, p.201). Although this way of describing cognitive development has been criticized due to its un-clarity by researchers (Siegler, 1996, p.20), it could be considered an unparalleled step in this area.

Piaget's Influence on Psychology

Piaget's theories continue to be studied in the areas of psychology, sociology, education, and genetics. His work contributed to our understanding of the cognitive development of children. Piaget helped demonstrate that childhood is a unique and important period of human development.

In their 2005 text, "The Science of False Memory," authors C.J. Brainerd and V.F. Reyna wrote of Piaget's influence: "In the course of a long and hugely prolific career, he contributed important scholarly work to fields as diverse as the philosophy of science, linguistics, education, sociology, and evolutionary biology. Above all, however, he was *the* developmental psychologist of the 20th century.

For two decades, from the early 1960s to the early 1980s, Piagetian theory and Piaget's research findings dominated developmental psychology worldwide, much as Freud's ideas had dominated abnormal psychology a generation before. Almost single-handedly, he shifted the focus of developmental research away from its traditional concerns with social and emotional development and toward cognitive development."

Influence on Psychologists

Piaget's work influenced other notable psychologists including Howard Gardner and Robert Sternberg.

- Howard Gardner: Gardner developed the theory of multiple intelligences in the 1970s and 1980s. Unlike Piaget, Gardner believed that there are various types of intelligence vs. a single type of intelligence of which people have greater or lesser amounts.⁷ Gardner cited Piaget as greatly influencing his work, as he sought to prove Piaget's theory wrong.
- **Robert Sternberg**: Similar to Gardner, Sternberg's work uses classical theories of intelligence like Piaget's, but contradicts them. Sternberg is best known for his triarchic theory of intelligence in which he posits there are three types of intelligence: practical, creative, and analytical. According to Sternberg, IQ tests only measure analytic intelligence, which doesn't give a complete picture of someone's intelligence.

Influence on Education

Piaget's work continues to influence education. He advocated for the following principles, which are still often used in classrooms:

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- **Discovery learning**: This emphasizes the idea that children should be given the freedom to explore and discover new information on their own. A learning environment should also provide courses such as music, dance, and art.
- **Problem-solving**: Piaget believed that children should be taught by solving problems; in addition, teachers should pay attention to *how* a child arrives at a correct answer.
- **Stage-based teaching**: Since each child falls into a different stage of cognitive development (and children progress through the stages in their own time), Piaget believed it was important that the learning environment reflects which stage a child is in.

Jean Piaget's	Contributions:
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Serial	Contribution	Year	Link
number			
01	Published his first paper on the albino	1907	https://psycnet.apa.org/record/2003-
	sparrow		<u>00966-001</u>
02	Developed his first IQ test for children	1912	https://psycnet.apa.org/record/2009-
			<u>14236-013</u>
04	Proposed the theory of cognitive	1950	https://psycnet.apa.org/record/2001-
	development		<u>01618-002</u>
05	Published "The Psychology of	1950	https://www.amazon.com/Psycholog
	Intelligence"		y-Intelligence-Jean-
			Piaget/dp/0415174064
06	Founded the International Center for	1955	https://www.unige.ch/icge/en/
	Genetic Epistemology		
07	Co-authored "The Growth of Logical	1958	https://www.amazon.com/Growth-

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	Thinking from Childhood to Adolescence"		Logical-Thinking-Childhood-
			Adolescence/dp/0415254014
08	Presented the theory of genetic	1967	https://psycnet.apa.org/record/2007-
	epistemology		<u>16856-005</u>
09	Founded the Jean Piaget Society	1970	https://www.piaget.org/
10	Published his autobiography, "Insights and	1977	https://www.amazon.com/Insight-
	Illusions of Philosophy"		Illusion-Philosophy-Jean

Piaget's theories and modern psychology:

Evaluating the effect of Piaget on developmental psychology is impossible such as the effect of Shakespeare on English and Aristotle on Philosophy (Lourenco and Machado, 1996, p.143). Although there are some aspects of Piaget's theories that have been criticized, he regarded himself as one of the main revisionists of his theories. His real revision appeared after the 1970s (Miller, 2011, p.86). It is argued that there are some possible reasons for criticizing Piaget's theories. One possible reason could be related to his productive contributions to developmental fields. For example, he has an enormous number of books and articles. According to Smith (2009, p.26), Piaget has 100 books and 600 published papers. Another possible reason could be linked with his methodology because he used different methods for his research such as nonexperimental methods and non-statistical style. The third possible reason is language. For example, He published 88 articles and books in France, but still about 43% are unavailable in English (Smith, 2009, p.29). It is also possible to add Piaget's perspective of childhood as such a reason for misunderstanding Piaget's theories because he assumes that logically there are differences between children and adults. However, this hypothesis was against the common ideas at that time in psychology. Jean Piaget, a pioneering Swiss psychologist, is renowned for his significant contributions to the field of developmental psychology. He proposed several key

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theories that revolutionized our understanding of cognitive development in children. Here are the main theories associated with Jean Piaget:

- Sensor motor Stage (0-2 years): Piaget's sensor motor stage is the first stage of cognitive development. During this period, infants and toddlers learn about the world through their senses and motor actions. Object permanence, the understanding that objects continue to exist even when they are out of sight, is a critical concept developed during this stage.
- **Preoperational Stage (2-7 years):** In the preoperational stage, children start to use symbols to represent objects and events. Language development and imaginative play are significant achievements during this period. However, children in this stage often exhibit egocentrism, where they struggle to perceive things from others' perspectives.
- Concrete Operational Stage (7-11 years): Children in the concrete operational stage demonstrate improved logical thinking. They can perform operations on concrete objects and understand concepts like conservation (the understanding that quantity remains the same despite changes in appearance). Abstract or hypothetical thinking is still challenging at this stage.
- Formal Operational Stage (11+ years): This stage marks the development of abstract and hypothetical reasoning. Adolescents and adults in the formal operational stage can think systematically, reason about abstract concepts, and engage in hypothetical and deductive reasoning. They can also consider multiple perspectives and possibilities.
- Theory of Cognitive Development: Piaget's theory of cognitive development suggests that children actively construct their understanding of the world through interactions with their environment. He emphasized the importance of cognitive conflict and disequilibrium in driving cognitive development. According to Piaget, children progress through these stages in a fixed order, although the age range and rate of progression can vary.
- Theory of Genetic Epistemology: Piaget's genetic epistemology is the study of the development of knowledge (epistemology) based on the genetic origins (genesis) of human thought. Piaget explored how knowledge evolves through biological adaptation to

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the environment. He emphasized the role of genetics and biological maturation in shaping cognitive development.

• **Theory of Constructivism:** Piaget's constructivist theory posits that learning is an active process where individuals construct new knowledge based on their experiences and prior knowledge. Learners actively engage with the environment, assimilating new information into existing cognitive structures (assimilation) and accommodating their mental frameworks to incorporate new experiences (accommodation).

These theories have had a profound influence on education and child psychology, shaping our understanding of how children learn and develop cognitively.

Educational implications:

Jean Piaget's theories of cognitive development have had significant educational implications in the fields of psychology, sociology, and education. Here is a detailed explanation of these implications in each of these domains:

- Educational Implications in Psychology:
- Understanding Cognitive Development: Piaget's work provides psychologists with a framework to understand how cognitive development occurs from infancy to adulthood. This insight into the progression of cognitive abilities has been crucial for researchers studying child development and cognitive psychology.
- Scaffolding and Zone of Proximal Development: Piaget's theories influenced the concept of scaffolding developed by psychologist Lev Vygotsky. Scaffolding involves providing learners with the necessary support to move beyond their current developmental level. It emphasizes the importance of adapting teaching methods to a student's cognitive readiness, promoting better learning outcomes.
- **Development of Assessment Tools:** Piaget's stages of cognitive development have inspired the creation of various educational assessment tools. These tools help educators and psychologists assess a child's cognitive development and tailor their teaching strategies accordingly.

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- **Individualized Learning:** Piaget's ideas support the concept of individualized or personalized learning. Educators recognize that learners at different developmental stages require tailored instruction, which aligns with Piaget's emphasis on learners actively constructing knowledge through their experiences.
- > Educational Implications in Sociology:
- Social Interaction and Cognitive Development: While Piaget's work primarily focused on individual cognitive development, it has highlighted the importance of social interaction and peer collaboration in the learning process. Sociologists have used Piaget's ideas to explore the role of social factors in cognitive development.
- Role of Culture: Piaget's theories have sparked discussions on how cultural factors influence cognitive development. Sociologists have explored how cultural differences may affect cognitive processes and learning approaches.
- **Implications for Education Systems:** The recognition of the importance of social interaction and cultural diversity in cognitive development has influenced educational institutions and curriculum development. Educational systems are increasingly emphasizing inclusive education and cultural sensitivity in the classroom.
- > Educational Implications in Education:
- **Constructivist Learning:** Piaget's theory of constructivism has had a profound impact on educational practices. Constructivist approaches emphasize active learning, problemsolving, and student engagement. Educators design lessons that allow students to build their understanding through hands-on experiences and reflection.
- Child-Centered Learning: Piaget's theories advocate for a learner-centered approach. Educators are encouraged to focus on students' individual needs and adapt their teaching methods accordingly. This approach has given rise to more flexible and responsive teaching practices.
- **Curriculum Development:** Piaget's stages of cognitive development have influenced curriculum development, ensuring that educational materials and activities align with the developmental readiness of students. Curriculum designers take into account the cognitive challenges and opportunities presented at each developmental stage.

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• Assessment Strategies: Piaget's theories have led to a shift in assessment practices. Educators employ diverse assessment methods to gauge students' understanding and development, moving away from traditional rote memorization tests toward more holistic assessments that consider cognitive growth.

In summary, Jean Piaget's work on cognitive development has had far-reaching implications for psychology, sociology, and education. His theories have provided valuable insights into how children learn and grow, prompting shifts in teaching methods, educational philosophies, and the design of inclusive and culturally responsive educational systems. The focus on constructivism, individualized learning, and the role of social interaction has transformed how educators and researchers approach the development of young minds and cognitive readiness for learning.

- > An overview of Jean Piaget's ten significant contributions:
- **Published his first paper on the albino sparrow** (**1907**): In 1907, Piaget published his first scientific paper, focusing on the albino sparrow. While this contribution may seem unrelated to his later work, it marked the beginning of his career in scientific research and laid the foundation for his future studies in psychology and cognitive development.
- Developed his first IQ test for children (1912): In 1912, Piaget created his first IQ (intelligence quotient) test for children. This early endeavor in the field of psychology showcased his interest in understanding cognitive abilities and intelligence in young individuals, setting the stage for his later groundbreaking theories.
- **Proposed the theory of cognitive development (1950):** In 1950, Piaget introduced his influential theory of cognitive development. This theory outlined the stages of intellectual growth in children, emphasizing their active role in constructing knowledge through interactions with the environment. Piaget's theory revolutionized the understanding of child psychology and education.
- **Published ''The Psychology of Intelligence'' (1950):** In the same year, Piaget published "The Psychology of Intelligence," a significant work that delved into the intricacies of human intelligence. This book further explored his cognitive development theory, providing valuable insights into the nature of human intelligence and its development throughout childhood.

- Founded the International Center for Genetic Epistemology (1955): In 1955, Piaget established the International Center for Genetic Epistemology, a research institution dedicated to studying the relationship between biological and cognitive aspects of knowledge. This center became a hub for researchers interested in understanding the origins and development of knowledge systems.
- Co-authored "The Growth of Logical Thinking from Childhood to Adolescence" (1958): Piaget co-authored this seminal work in 1958, focusing on the growth of logical thinking in individuals from childhood to adolescence. The book explored the progressive development of logical reasoning skills, shedding light on the cognitive processes underlying human thought.
- Presented the theory of genetic epistemology (1967): In 1967, Piaget presented his theory of genetic epistemology, emphasizing the evolutionary aspects of knowledge acquisition. This theory explored how knowledge evolves over time, drawing from both biological and cognitive foundations. Genetic epistemology became a key concept in Piaget's body of work.
- Founded the Jean Piaget Society (1970): In 1970, Piaget founded the Jean Piaget Society, an international interdisciplinary organization dedicated to the study of cognitive development. This society continues to promote research, collaboration, and discussions related to Piagetian theories and their applications in various fields.
- **Published his autobiography, "Insights and Illusions of Philosophy" (1977):** In his autobiography published in 1977, Piaget reflected on his life, experiences, and intellectual journey. This work provided readers with a deeper understanding of Piaget's personal and professional life, offering valuable insights into the mind behind the influential theories of cognitive development.

These contributions collectively showcase Piaget's profound impact on the fields of psychology, education, and epistemology, shaping our understanding of cognitive development and human intelligence.

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> Conclusion:

In conclusion, Jean Piaget's contributions to developmental psychology, particularly his stages of cognitive development, have had a lasting and significant impact on the field of psychology and related disciplines, as well as on educational practices and child-rearing approaches worldwide. Piaget's work has provided valuable insights into how children progress in their cognitive abilities, offering a structured framework to understand their intellectual development from birth to adolescence.

The four stages of Piaget's theory- sensor motor, preoperational, concrete operational, and formal operational-offer a comprehensive overview of the cognitive milestones children achieve as they grow. From understanding object permanence in infancy to mastering abstract thinking and moral reasoning in adolescence, Piaget's stages have been instrumental in explaining the diverse aspects of cognitive development.

However, it's important to recognize the limitations of Piaget's theory. The fixed age ranges for each stage have been criticized for not accounting for the individual variations in cognitive development, and his early work did not thoroughly explore the influence of cultural and social factors on cognitive growth.

Despite these limitations, Piaget's theories continue to be foundational in developmental psychology. Researchers have built upon his work, expanding the theoretical framework to incorporate a broader perspective that considers cultural and social influences. As a result, we have a more comprehensive understanding of how children develop their cognitive abilities and knowledge.

In summary, Jean Piaget's legacy in developmental psychology endures, providing valuable insights into the complex journey of cognitive development in children. His work has paved the way for a deeper understanding of the human mind's evolution from infancy to adulthood and the impact of various factors on this fascinating journey.

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