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ABSTRACT

This paper compares the early life, background, and education of Jean Piaget and Lev Vygotsky. It makes the case that an adaptation of the curve developed by C. Quigley can be used to trace the motivations of both Piaget and Vygotsky in creating their respective theories. The analysis also reveals the adversity that each man faced. Although they lived in countries with very different governments and histories, the political and military aspects of their nations had an impact on both men as they created their pedagogies. Both were influenced by prevailing science attitudes. Had they not lived in countries with flexible science attitudes, neither would have been a pedagogue. Piaget would have been a natural scientist; Vygotsky, a teacher. Flexibility at the university level led each to see that psychology required further investigation. The social factor had the greatest influence on both men. Without the influence of their hometowns, parents, siblings, friends, mentors, and teachers, neither would have created a pedagogy. Early in their lives, both men rejected organized religion in favor of philosophy, but neither rejected the heart of his faith. In the final analysis, however, it was education that gave each the means by which he could relieve inner psychological tensions through the development of his theories. To overcome angst, they had to expand their intellects. (Contains 192 references.) (SLD)

A Biographic Comparison Tracing the Origin of Their Ideas of Jean Piaget and Lev Vygotsky

By Susan Pass

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AERA: Jean Piaget and Lev Vygotsky - the Origins of Their Ideas

Susan Pass, Ed.D

The lives, problems, work, and efforts of both Piaget and Vygotsky came together to delineate lesson theories that created a pedagogy that contained an epistemology.

Pedagogy is graphing childhood development and this includes the cognitive.

Epistemology is how a person comes to know the world and obtain knowledge in it.

These men did not create their works in a vacuum.

The following five factors influence all human thought and actions:

political/military, economic, science/technology, social, religious/philosophical, and arts/education. Studying this biographical five-factor tool can also show the germ the led to the creation of their theories. The germinal image is the origin of a creative work (Sophia Andres, lecture UTPB, June 5, 1998). It is an emotional experience so intense that the individual is compelled to create (Andres, 1988).

For both Piaget and Vygotsky, their germinal image is found in the "angst" that arose within them when facing their respective adversities. Angst is the German word for nervous tension. For Piaget, it arose because of a dysfunctional family. For Vygotsky, it arose because of a dysfunctional country. These two situations are found within two pillars of the curve (social for Piaget and political/military for Vygotsky). Knowing how these situations resulted in the formation of ideas is the focus of this study.

Thus, this curve is able to analyze not only a person's chronological stages of development but also their ideas. This study presents the argument that an adaptation of Quigley's curve can be used to trace the motivations of both Piaget and Vygotsky in

creating their respective theories. This curve can also be used to trace the origin of the ideas enclosed within those respective theories.

This analysis also indicated the adversity that each man faced. There is no creativity without adversity (John-Steiner, 1985). In addition, where and when you live engenders your identity (R.Hamilton, personal communication, May 1998). Noting how Piaget and Vygotsky faced their difficult situations and how this molded both their identities and their ideas has implications for teachers who need to understand not only how to deal with their own difficult situations but also how to help their students deal with their own adversities.

Political/ Military

The lives and ideas of Piaget and Vygotsky were most opposite when seen in the light of their respective country's government and involvement in wars. Both lived during World War I. Both lived during the start and spread of communism. Both lived during Stalin's reign of terror when all communication between the USSR and Europe was cut off. However, because his country was a democracy that did not fight during the turbulent 20th century, the war had less impact on Piaget.

Piaget.

As stated, Piaget's peaceful, democratic Switzerland, which was neutral in wartime provided a more stable, less stressful environment. Nevertheless, World War I did affect Piaget's psyche. Piaget helped his mother as she volunteered assistance to prisoners of war from both sides of the conflict. What Piaget saw encouraged him to reject organized, established religion. In its place, he discovered a personal God "within you" (Piaget, 1952). He then turned completely to philosophy. Piaget believed that the

heart of philosophy is epistemology. Piaget strove to reconcile science and religion by purging philosophy of its irrational subjectivity (Montangero, Maurice-Naville, 1997). It was irrational subjectivity that caused World War I. In demographically and ideologically homogeneous Switzerland, individualism and freedom were preserved and encouraged. Because of this, Piaget felt comfortable concentrating on how an individual learns, rather than group influences.

Vygotsky.

Vygotsky, on the other hand, had his identity rooted in: first, autocratic Czarist repression; second, World War I; third, the Russian Revolution and Leninism; and, finally, Stalin's dictatorship and purges. These events caused adversities out of which Vygotsky created cultural-historical theory. While still a child, Vygotsky experienced anti-Jewish pogroms in 1903 (Pinkus, 1988) and 1906 (Gilbert, 1979). He also experienced watching his father being put on trial for organizing a successful defense of Gomel (Blanck, 1990). Although acquitted, Vygotsky's father became "embittered" by Czarist persecutions (van der Veer & Valsiner, 1991, p.5). Vygotsky, himself, would later write on anti-Semitism (Vygotsky, 1916). Vygotsky would also become interested in literary pathos and tragedy (van der Veer & Valsiner, 1991).

While neither man fought in World War I, it impacted both. The conflict, however, impacted Vygotsky more than it did Piaget. Besides bringing about the Russian Revolution, World War I also deprived Vygotsky and his family of adequate food and fuel. The result was that both Vygotsky and his favorite brother, Dodik, would contract tuberculosis. Both would eventually die from the disease. Dodik died during the Russian Revolution and his death made Vygotsky's psyche deteriorate into a deeper nervous

tension (Blanck, 1990). The treatment for tuberculosis back then was plenty of rest at a sanitarium. Vygotsky would have plenty of time to think and reflect during his multiple hospitalizations, until his death in 1934. Although he was allowed some visitors, his family and friends could not spend a great deal of time with him. Time for individual reflection is needed in all creative endeavors. During hospitalization for a 1924 attack, Vygotsky finished *The Psychology of Art*, his dissertation thesis on Shakespeare's *Hamlet*. In 1925, still confined to the sanitarium, he wrote *The Historical Meaning of the Crisis in Psychology*. He was hospitalized again in 1933. From his deathbed at the sanitarium in 1934, he dictated the last chapter of *Thinking and Speech*, which is said to be, "In my opinion, one of the most beautiful pieces of psychological literature of all time" (Blanck, 1990).

The Russian Revolution also impacted Vygotsky more than it did Piaget. Despite his mother being a Christian socialist, Piaget saw communist repression (especially under Stalin) as particularly negative -- so much so that, during part of his professional career, he would reject some of Vygotsky's ideas as examples of what a Stalinist dictatorship could use to imprison young minds.

Without the Russian Revolution, Vygotsky would not have become trapped in Kiev. In Kiev, he saw that many intellectuals were doing jobs for which they were not trained (Wertsch, *Culture, Communication, and Cognition*, 1985) in order to establish a workers' paradise. Vygotsky became caught up in this movement and changed careers from a public high school teacher to a psychologist. Returning to Gomel after his brother's death in Kiev, Vygotsky had time to reflect on the Russian Revolution. He stayed in Gomel from 1920 until 1924. This was partly to protect his parents from roving

bands of bandits, partly because he met his future wife, Rosa, and partly because he was not yet sure if he wanted to support communism (Blanck, 1990). What made him decide to launch a theory that proved Marx's dialectical materialism correct? It was a combination of attacks by the White Army, a history of Czarist repression, and the fact that Lenin would not allow anti-Semitism in his new USSR. So, Vygotsky saw Leninism as liberating. It was this war that opened up opportunities for him that he would not have had under the Czar. In Czarist Russia, Vygotsky would never have been allowed to be a public high school teacher. Thus, his first psychological laboratory and experiments would not have taken place. Also, under the Czar, Vygotsky would have been either a lawyer or a doctor. His cultural-historical theory would never have been written because he would have never received the opportunity to do so.

Conclusion.

Despite living in countries with completely opposite governments and histories, the political and military pillars of their nations did impact both Piaget and Vygotsky to create their respective pedagogues in an attempt to prevent similar unhappiness from impacting others. Indeed, one may ask what would Vygotsky have created if he was raised in democratic, peaceful Switzerland and what would Piaget have created if he had been born in Czarist Russia with all the tragedy endured by its people in this century?

Economic

Revolutions are middle class movements. Both Piaget and Vygotsky were revolutionary. The pedagogues that they created revolutionized education. Because both their hometowns and families were middle class, both Piaget and Vygotsky were products of middle class environments. The middle class morality adhered to by both

encouraged intellectual pursuits and academic endeavors. Both sets of parents were supporters of their town's culture. Piaget's father wrote a book about the town's history and his mother worked for humane treatment of POWs from both sides of the war. Vygotsky's parents started their town's library. They also supported many cultural activities for Gomel, such as literary debating societies and plays.

Swiss prosperity continued despite world wars and the Great Depression. Piaget's students enjoyed all that was necessary for a rich, inquiring academic environment. The people of the USSR faced severe economic depression during World War I, during the Russian Revolution, and during the 1930s. Thus, Vygotsky chose to use a cheaper "social other" (teachers) rather than an inquiry-rich environment to format his ideas. However, both men, raised in middle class families, received the best education that their families and countries could provide. This made education important to both Piaget and Vygotsky.

The final part of the economic factor is employment. The learning and ideas for both men came to fruition during their postgraduate employment. It was their on-the-job activities during their first employment after getting their baccalaureate that allowed both men to begin preliminary research on all the ideas that their life experiences gave them. This research, based on all that they had learned, proved their ideas correct. Indeed, it was the freedom of their on-the-job research that allowed both men to start their professional lives with their respective pedagogues already created.

Piaget.

Piaget learned about chronological stages of development, assimilation, and equilibration from his job at the Neuchatel Museum of Natural History under the tutelage of Paul Godet (Piaget, 1952, 1966, & 1976). He was paid in specimens (i.e., mollusks

and snails) that he collected and catalogued. This collection and the reading of Herbert Spencer, suggested that Piaget could apply the evolutionist approach to studying the psychology of knowledge (Spencer, 1855; Piaget, 1952).

Piaget's employment after a semester studying psychology at the University of Zurich also influenced him. In Paris, Piaget worked with Dr. Theodore Simon, Dr. Pierre Janet, and Dr. Henri Pieron developing an intelligence test in Dr. Alfred Binet's laboratories. Dr. Simon and Dr. Binet divided children's development into stages (Binet & Simon, 1905). This endorsed what Piaget learned while a child at the Neuchatel Museum of Natural History. Dr. Pierre Janet worked on a genetic approach to the psychology of behavior. He also formulated ideas about the hierarchical organization of psychological functions (Amann-Gainotti, 1992). These ideas also confirmed Piaget's childhood observations.

However, while working in the rue de la Grange aux Belles, Piaget became more interested in why children fail to learn. Offered Dr. Binet's laboratory, Piaget started research there to prove his earlier pedagogical ideas correct. "What had been at the outset nothing but a boring and annoying situation became a real dialogue with suggestions..." (Gruber & Voneche, 1980, p. 53). A new method of interrogating children was born. Piaget used this method to lead the child to show how he formulates, solves, and thinks. From Dr. Simon and Dr. Pieron, Piaget became interested in child psychology.

However, it was while working directly for Dr. Janet that Piaget observed the notion of intelligence as an adaptation to new circumstances. Later, at the Jean Jacques Rousseau Institute, Piaget observed that his boss and former mentor, Euoard Claparede,

Director of the Jean Jacques Rousseau Institute in Geneva, accepted Janet's idea. It was Claparede who started the so-called “activity schools” in which a child investigated educational challenges that were appropriate for that child’s chronological stage of development while in an academically-rich learning environment. Claparede allowed Piaget free observational research, as long as Piaget studied cognitive learning. This exactly matched Piaget’s new interest which began during his post-graduate work in Paris.

In Paris, Piaget observed children only in the hospital. However, in Geneva working at the Jean Jacques Rousseau Institute, Piaget observed children in more natural surroundings, such as the school, la maison des petits (Munari, 1994). This created an interest in pedagogy. Claparede defined intelligence as adaptation whose function was to compensate for the deficiencies of innate or automated adaptations. Claparede also showed the biological foundation of mental activity and gave Piaget a functional explanation of behavior (Montangero & Maurice-Naville, 1997).

Vygotsky.

Vygotsky returned from Kiev to Gomel only to discover that his world had changed. Unlike under the czars, he was no longer restricted to teaching in just Jewish schools (Blanck, 1990). Vygotsky started working many jobs at once and they were all in the field of education. For the next seven years, he taught literature and Russian at the local Labor School. He also taught classes on aesthetics and the history of art at a local conservatory (Wertsch, 1985). He built a psychology laboratory at the Gomel Teachers' College, where he delivered a series of lectures that provided the groundwork for one of his first major books, *Pedagogical Psychology* (Wertsch, 1985; van der Veer & Valsiner,

1991). This is not the only testament to Vygotsky's growing pedagogical interest. He taught courses in logic and psychology at the Pedagogical Institute. In addition, he worked teaching literature and education courses at the Workers' Faculty and adult schools, including technical schools for pressmen and metallurgists (Vygodskaya, 1984). Vygotsky also headed the theater section of the Gomel Department of People's Education, cooperating with one of its organizers, Ilya Danjushevsky, who would later invite him to Moscow to work in the field of defectology.

In these cases, it was the state or USSR government that was functioning as "the social other." When Vygotsky did independent work, like Piaget enjoyed, he failed. Vygotsky edited and published articles in the theater section of a local newspaper. He also started a publishing venture called "Ages and Days," which printed only two literary works: *Fire*, a collection of poems of Ilya Erhenburg and a collection of poems by Jean Moreas (Dobkin, 1982). He was one of the founders of a literary magazine entitled *Veresk*. These ventures failed because there was of a shortage of paper within the USSR (Dobkin, 1982).

Vygotsky also did volunteer work. He was at the center of Gomel's intellectual avant-garde. He started Literary Mondays, where his friends and neighbors discussed new prose and poetry. Later, some could still recall his lectures on Shakespeare, Chekhov, Pushing, Einstein, and the theory of relativity (Vygodskaya, 1984). In 1924, he married an intelligent teacher, Rosa Smekhova. By that time, educational psychology had become his central concern (Blanck, 1990) but his experience made him focus on the social rather than individual aspects of pedagogy.

Conclusion.

All revolutions are middle class. Both Piaget and Vygotsky created revolutions in pedagogy. Without their middle class backgrounds, they would not have done so. If rich, they would have been members of the establishment and, therefore, not prone to reform. If poor, they would not have received the education necessary to launch them into their careers.

Science

Since psychology is a science, the leading psychologists of their day influenced both Vygotsky and Piaget -- including each other. Gestalt psychology influenced the creation of their respective pedagogues by endorsing their respective ideas. Gestalt psychology taught that one cannot break up perception into its various parts and study those parts separately. The human psyche demands that perception (seeing, hearing, feeling) is observable as a whole. That observance points out intellectual patterns. Gestalt psychology, thus, was a Hegelian anti-thesis to empiricism and behaviorism. This allowed Piaget and Vygotsky to create their synthesis: genetic epistemology and cultural-historical theory.

Both read but rejected Sigmund Freud and psychoanalysis because of its irrational, introspective nature without proof in experimental research (Piaget, 1952; Vygotsky, 1924). Both wrote to combat the empiricist and behaviorists (such as Pavlov). The empiricists were too irrational with their introspective approach to theory (Piaget, 1952) and the behaviorists ignored human consciousness or free will (Vygotsky, 1924). The works of biologist Charles Darwin and psychologist/philosopher Herbert Spencer also influenced both Piaget and Vygotsky. Vygotsky would build upon their theories of

evolution to prove Marxism correct by providing a cultural-historical context for learning. Piaget would react using their idea to create a biological explanation for the evolution of human learning.

Piaget.

After receiving his doctorate in 1918 with a dissertation on the mollusks of Valais (Piaget, 1921), Piaget traveled to Zurich for postgraduate study and work. There, he visited Lipps' and Wreschner's psychological laboratories and Bleuler's psychiatric clinic. He "felt at once that there lay my path...in utilizing for psychological experimentation, the mental habits I had acquired in zoology" (Piaget, 1952, p. 243). However, the contact with Lipps and Wreschner seemed to him to have little relevance for the fundamental problems that he wanted to investigate. The contact with Bleuler, on the other hand, had a more lasting influence because it brought Piaget into contact with the theories of Freud and Jung (Chapman, 1988). As Piaget investigated these theories, he was to personally reject those of Freud because of their irrational nature (Piaget, 1952, 1966, & 1976). In fact, Piaget saw genetic epistemology as an effort to purify epistemology from such irrational influences (Piaget, 1952 & 1976).

In the fall of 1919, Piaget attended lectures on the philosophy of science by L. Brunschvicg, whose psychological orientation and historical-critical method would exert a lasting influence on him, as attested to by the many references to Brunschvicg in Piaget's writings on the epistemology of science (Chapman, 1988). However, it was Piaget's encounter with Dr. Theodore Simon that first steered Piaget toward child psychology. Dr. Simon and Dr. Paul Binet were developing an intelligence test when Dr. Binet died. Dr. Simon was unable to use Binet's Paris laboratory as he was living in

Rouen. So, Dr. Simon gave the laboratory to Piaget.

Working on this project were three psychologists who influenced Piaget: Dr. Cyril Burt, Dr. Henri Pieron, and Dr. Pierre Janet. With the death of Binet, the project needed a young, inquiring mind that could do independent work. So, Janet hired Piaget for the purpose of standardizing Dr. Burt's test of reasoning on Paris schoolchildren at the Ecole de la rue de la Grange-aux-Belles. However, Piaget wrote that, "I never really did it. Standardization was not at all interesting; I preferred to work with the errors on the test" (Hall, 1970, p. 27). If he could discover the reason for inaccurate reasoning, he might be able to discover the reason for his mother's mental illness and his own two nervous breakdowns. Piaget's mentor, Pierre Janet, was at odds with Freud, but because Burt allowed Piaget free rein, Piaget was able to use this time to study psychoanalytic techniques. These and other clinical observations in Binet's laboratory were to form the background for Piaget's psychological research and would directly lead to the creation of genetic epistemology.

Until this time, Piaget had possessed only a very general theoretical system and a desire for experimentation, but he lacked a concrete area of investigation. By assimilating Burt's methods to his own preexisting notion of structure, Piaget transformed the task that Simon had set for him into something different; namely, failures in learning (Chapman, 1988; Piaget, 1952).

Dr. Pieron worked on the following topics that influenced Piaget to create genetic epistemology: evolution of the psyche, relationships between human and animal learning, and the structure of memory (Pieron, 1929). Pieron established the field of psychophysiology. He provided the link Piaget needed between earlier zoological studies

and an evolution of thinking. Dr. Janet investigated hierarchical levels of behavior (Janet, 1926). He directly influenced Piaget to think about the evolution of epistemology into four broad periods. Piaget used these periods when he wrote about the chronological stages of cognitive development, but he made some changes. The changes were that Piaget had only three stages and put chronological age divisions on each. Piaget's stages are: sensorimotor (birth until one and a half years), concrete operations (one a half years until eight years), and formal operations (eight years onward).

The first psychologists to have considered mental development as passing through a series of steps or stages were Wilhelm Preyer (1882) and James Baldwin (1894). Both Janet and Piaget read these authors and conversed on their ideas. Janet was the first to describe feelings by regulations of action (Janet, 1902). Janet was also the first, however, to set stages whose periods correspond closely to the Piagetian description of developmental stages. He obtained this concept from the 18th century concept of regulation used in economics and physiology (Montangero & Maurice-Naville, 1997).

Building on this, another psychologist, Claparede, defined mental life and all living organisms by their self-regulating ability, which allowed a return to equilibrium each time this was lost (Claparede, E, 1917). Claparede recalled the parallel between this idea and Le Chatelier's law of thermodynamic equilibrium in physical chemistry, to which Piaget often referred (Montangero, J. & Maurice-Naville, D., 1997).

The philosopher Henri Bergson inspired two Americans to write on the notions of evolution and tie this to the field of psychology. Piaget was influenced by both the functionalism psychologist William James (1909) and the genetic psychologist James Baldwin (1894). However, it was Claparede who tied their work together for Piaget.

Claparede "had the most direct influence of Piaget's thinking, for he showed the biological foundation of mental activity and gave a functional explanation of behavior" (Montangero & Maurice-Naville, 1997, p. 71).

In his 1952 and 1976 autobiographies, Piaget described how, as an adolescent, he was interested in two fields of inquiry: natural science and the philosophy of knowledge. These two modes of inquiry were to lay the foundation for his later work. Charles Darwin impacted both fields dynamically during Piaget's formative years. Indeed, Piaget used genetic epistemology in an attempt to trace the evolution of human learning (Barbara Peterman, personal communication, October 20, 1996). However, biologists other than Charles Darwin also made an impact upon Piaget.

Piaget was greatly influenced by French-speaking biologists "...who, although recognizing the importance of interaction with the environment, did not refute the Darwinian idea of natural selection" (Montangero & Maurice-Naville, 1997, p. 3). Piaget found concepts in Le Dantec's works that he later adopted himself, such as equilibrium, assimilation, and imitation (Le Dantec, 1895). Evolutionary biologist Charles Darwin and evolutionary philosopher Herbert Spencer influenced Piaget. Darwin and Spencer also influenced other writers such as Bergson, Sabatier, Baldwin, and Reymond. Piaget and Vygotsky read the works of all these evolutionary theorists.

However, it was through reading an 1896 work of Henry Bergson that "...Piaget discovered the idea that biological evolution creates increasingly complex forms, which are extended on the intellectual level" (Montangero & Maurice-Naville, 1997, p. 70).

This book by Bergson influenced Piaget's plan to develop a biological theory of

knowledge. From Baldwin, "Piaget borrowed the notion of accommodation, who had borrowed it from Spencer" (Montangero & Maurice-Naville, 1997, p. 66).

Vygotsky.

While science impacted Piaget's thinking, it was the humanities than influenced Vygotsky. Vygotsky used his knowledge of philosophy, history, philology, and literary analysis to combat what he believed was wrong with science; in particular, his cultural-historical theory was a means to counteract behaviorism. Vygotsky's 1924 paper, entitled *The Methodology of Reflexology and Psychological Studies*, was a thinly veiled criticism of both Pavlov and Bekhterev. Vygotsky claimed in this paper that the behaviorists "...cannot ignore the facts of consciousness" (The Vygotsky Group, 1996). Quoting from the work of both Pavlov and Bekhterev, Vygotsky showed that both researchers acknowledge the important role of "subjective experience" or consciousness in daily life, but "deemed the scientific study of this role impossible" (van der Veer & Valsiner, p. 41). Vygotsky also read two other papers at the Second Psychoneurological Congress in Leningrad. One was entitled *How We Have to Teach Psychology Now*. The other one, presented a few days later was entitled, *The Results of a Survey on the Mood of Pupils in the Final Classes of the Gomel Schools in 1923* (Vygodskaya, personal communication, April 5, 1989). Vygotsky demonstrated his ability as a psychologist in the tradition of positivism and reform with these papers.

Lenin's wife was looking for new researchers to help her reform her country's educational programs. After listening to Vygotsky deliver his paper that attacked the behaviorists, A.R. Luria, the academic secretary at the Moscow Institute of Psychology, asked its director, K.N. Kornilov, to invite Vygotsky to Moscow (Luria, 1976). Kornilov,

who agreed to help in this reform of Soviet education, stressed the developmental nature of all intellectual processes (Kornilov, 1922). This encouraged Vygotsky to start creating a concept that he had effectively experimented with in Gomel. Upon arriving in Moscow, Vygotsky quickly set up a troika of psychologists with Luria and Leont'ev to create cultural-historical theory (van der Veer & Valsiner, 1991).

Vygotsky did not take an interest in Gestalt psychology until after he came to the Moscow Institute in 1924. By that time, Vygotsky's ideas were already in place and he looked into Gestalt psychology as a way to confirm those ideas. Gestalt psychology attracted Kornilov and the other psychologists at his institute because it was a way to combat the "old German associationistic psychology" (van der Veer & Valsiner, p. 155). The Gestaltists attacked the view that experience could be broken down into its parts. Instead, they believed that people perceive organized patterns, not individual parts. Thus, while Gestalt psychology did not influence the creation of cultural-historical theory, it did endorse it.

In the late 1920s, Vygotsky, while working to finish the medical degree he had begun at the University of Moscow in 1913, became interested in the work of Kurt Goldstein. Goldstein believed in a holistic perspective to neurology (Goldstein & Gelb, 1920). Goldstein's work provided an endorsement for Vygotsky's ideas on thought and communication (Goldstein, 1948). Goldstein, working in defectology, reported that patients sometimes lacked the capability to follow abstract instructions. This supported Vygotsky's views on the role of concepts in organizing a person's thought processes (Vygotsky, 1931).

Later, Vygotsky would try to communicate with other Western psychologists such as Piaget, Meumann, and Montessori. However, Stalin's dictatorship effectively cut off such attempts at East-West communication by 1929. Thus, the influence of Western psychologists was very limited upon Vygotsky after that time. Information just could not come through. Piaget contributed the idea of stages of epistemological development in humans (Vygotsky, 1926). Meumann confirmed the strong role of the intellect in human psychology or "the so-called activity theory" (Leont'ev, 1975). Montessori confirmed what Vygotsky's classroom experiences in Gomel had taught him about childhood learning (Vygotsky, 1929). In addition, the American Dorothea McCardle contributed the name (but not the idea) of Zone of Proximal Development (Kozyrev & Turko, 1935). Thus, Vygotsky influenced psychology more than he was influenced by it. Cultural-historical theory was as much a reaction against the behaviorists as it was a creation of a new epistemology.

Conclusion.

If it had not been for flexibility within their respective nation's science pillars, neither Piaget nor Vygotsky would have been pedagogists. Instead, Piaget would have been a natural scientist and Vygotsky would have been a teacher. It was the flexibility at the university level that enabled each man to see within his major or principal field of study that psychology was something that needed further exploration. In addition, as they continued their further inquires, each man was influenced by the leading psychologist of his day. Despite this, both men rejected the major psychology and decided to embark on independent work. The result was the creation of their respective

pedagogues. However, the greatest influence that moved them to create these came not from science, but from their respective social milieus.

Social

The social factor had more impact upon Piaget than Vygotsky. For Piaget, this factor included the adversity he had to conquer in order to succeed and survive. For Vygotsky, this factor provided a nurturing, contributing environment within which his ideas could meld. While this factor provides the second greatest divergence (after the political/military factor) between Piaget and Vygotsky, it also provides an insight into what they had most in common; namely, their hometowns.

Both Neuchatel and Gomel were middle-size, bourgeoisie towns that were the intellectual center of their areas. If the parents could not help a child, both communities had people within them that would help that child. Both towns remembered persecutions, and that made them even more close knit and more nurturing than normal.

Both sets of parents also contributed to the culture of their respective towns. Piaget's father wrote a history of Neuchatel and was a respected professor of medieval literature at the local university. Some of his colleagues and friends became Piaget's mentors (like Arnold Reymond). Piaget's mother was active in obtaining humane treatment for prisoners of war on both sides of World War I (Newman & Holzman, 1993). Vygotsky's parents established Gomel's library. Vygotsky's father, Semyon, was an executive of the United Bank of Gomel who defended that town effectively during a czarist pogrom and, thus, saved many lives. His mother, Cecilia, encouraged literary and philosophical discussion groups with friends and neighbors (Blanck, 1990). Together, Vygotsky's parents set up ZPDs all over town -- an example that Vygotsky would copy

many times over. In these zones of proximal developments, the parents took turns being the “social other” to guide their children intellectually and deepen their knowledge and understanding of philosophy and literary analysis.

Both fathers were similar in personality. Both fathers enjoyed reading philosophy and introduced their sons to Kant and Hegel. Both fathers were hard workers and successful within their fields. Both fathers modeled successful scholarship. Both fathers, however, had a negative side to their personality that the sons adopted.

Arthur Piaget was "...a man of painstaking and critical mind, who disliked hastily improved generalizations..." but who also taught his son "...the value of systematic work, even in small matters..." (Piaget, 1952, p. 237). Piaget says that he got his "love of facts" from his father, who advised his son not to study in the humanities because "...it wasn't a true science" (Piaget, 1977, p.7).

Semyon Vygotsky had "...a rather stern disposition and bitter ironic humor..." (Wertsch, 1985, p. 3). The persecutions and pogroms that Russian Jews suffered developed a deep bitterness within Semyon that developed into a deep fatalism in his son (Blanck, 1990). Thus, from childhood, Vygotsky had a predilection for literary tragedy and pathos (Vygotskaya & Lifanova, 1996).

The similarities between Piaget's and Vygotsky's social biographies end with the comparisons of their hometowns and their fathers. The only similarities between both men's mothers were that both were intelligent and both influenced their sons to help others. Otherwise, they were very different. Vygotsky was close to his seven siblings and also to most of his cousins. Together with his young relatives, he set up ZPDs with them.

Here, the children took turns teaching and learning from each other as they put on plays, held debates, and analyzed literature.

Piaget was not close to his two sisters. Since Fernando Vidal's 1994 book, *Piaget Before Piaget*, Piaget's family has refused all interviews. Vidal quoted Piaget's oldest sister, Rebecca-Suzanne, as describing their mother as "neurotic" (Vidal, 1994, p. 14). Vidal also quoted Piaget's other sister as saying that the mother was "...an authoritarian woman who made their childhood unhappy" (Vidal, 1994, p. 14). She was hospitalized for three months for persecution psychosis. Upon release, she antagonized the Swiss Red Cross by incorrectly charging them with mistreatment of German prisoners of war. For these charges, that organization sued her but, like Vygotsky's father, she won acquittal in court. However, this was only because she made general charges and did not name any names (Vidal, 1994).

Vidal also hinted that Jean Piaget was hospitalized twice in the Swiss mountains not for tuberculosis, but for mental breakdowns, and that his youngest sister, Marthe, was also hospitalized once for the same reason. Tuberculosis was a more respectable disease than mental illness, so Piaget's father had people believe that it was for Piaget's physical health that he went to twice to the "mountain health resort of Leysin" (Vidal, 1994, p.162).

The "social other" and the independent learner are discussed by both men in their theories. However, they centralize their foci differently. This may be partly due to the fact that friends also were very different for both men. Despite this, they did influence both Piaget and Vygotsky. For example, Vygotsky had many "social others": close family, good friends, and effective teachers who also functioned as effective mentors. So,

Vygotsky would develop the idea that learning takes place via a "social other." Piaget had a dysfunctional family, no close friends, and all his teachers did more him more harm than good (Piaget, 1932). So, Piaget would write of the independence of the learner.

Piaget.

Starting with his 1952 autobiography, Piaget revealed much about his unhappy family life in childhood. His mother's "neurotic temperament" made "our family life somewhat troublesome" (Piaget, 1952, p. 237. His father, Arthur Piaget, was cold, distant, and critical. To escape this unhappy situation with Rebecca Piaget, the father retired into solitary study of medieval literature and the son abandoned play for serious work "very early...as much to imitate my father as to take refuge in a ...nonfictitious world" (Piaget, p 238). The success that Piaget consequently had as a solitary learner laid the foundation for his ideas of teacher as diagnostician and independence of the learner.

In his 1976 autobiography, Piaget wrote that he became interested in psychology as much as a method to find a reason or cure for his mother's mental illness as a field of study. His mother created two crises in his life. The first one was theological and the second one was philosophical (Piaget, 1952 & 1976). Out of these two crises came the ideas of accommodation, assimilation, and equilibration.

Piaget would reject Vygotsky's idea of the "social other" because, in addition to his parents, anyone placed by society in that position for him, failed him. Samuel Cornut, Piaget's own uncle and godfather, knowing Piaget had a mental conflict over his confirmation studies, took Piaget to a quiet vacation at Lake Annecy, where he introduced him to some philosophy. Cornut was a writer prone to depression whose free thinking but deep personal theology led him to reject a personal God for Deism (Cornut,

1910). Piaget would end up doing the same (Piaget, 1918).

Unlike Vygotsky, Piaget never had a close relationship with people his own age until after he started his professional career. He did not have a close relationship with his two sisters. He had no close friends either at school or in the neighborhood. Those who helped him were older people who helped him because they wanted to, not because they were directly employed in a role to do so. Mentorships of older people effectively directed Piaget but, when it came to success, he obtained success solely through his own independent work. Piaget later duplicated this role in Paris, where he functioned as a diagnostician, a role that his earlier mentors played for him. Because he observed that this worked for the students he was diagnosing in Paris, Piaget would emphasize the independence of the learner and the teacher as diagnostician in his written works.

Because his childhood was so unhappy, Piaget set about building an epistemology to prevent this happening to other children. He was also hospitalized twice for mental breakdowns (Vidal, 1994). Fighting mental illness within himself, Piaget started investigating incorrect thinking perhaps as much to find a cure for his mother and a technique of prevention for himself as a means to help others.

Helping him to do this were three Neuchatel clubs: the Friends of Nature, the Jura Club, and the Association of Christian-Swiss Students. The first two encouraged Piaget in his zoological studies and confirmed the work that he was doing under the guidance of Paul Godet in the local museum of natural science. The third provided him with a foundation upon which he would explore (but later reject) formal theology in favor of philosophy.

Because of his mother, a Christian socialist, and the Association of Christian-Swiss Students, Piaget was briefly a socialist. Unlike Vygotsky, the writings of Karl Marx had little influence on Piaget. Like Vygotsky, he was caught up in the bandwagon flurry of activity after the Communist Revolution. It looked as if good reforms were about to take place. It was not until after Lenin died and Stalin started his repression that Piaget would reject any form of socialism. Stalin's authoritative dictatorship and accompanying purges had a lot to do with Piaget rejecting some of Vygotsky's most important ideas; namely, the "social other" and the dialectics of language.

Vygotsky.

Lev Vygotsky changed his name from Vygodskya to Vygotsky while in his early twenties "...because he believed -- after some research of his own -- that his family originally came from a village called Vygotovo. No one has been able to establish its location;" so, his two daughters returned to the original family name of Vygodskaya (van der Veer & Valsiner, 1991, p. 4). Vygotsky was the second child in a family of eight children. When he was about a year old, his family moved from Orsha, where he was born, to Gomel, a somewhat larger town that was also in Belorussia. It was here that Vygotsky spent his childhood and youth. His family and his town were ready-made ZPDs.

Semyon Vygodskaya was an intelligent man who bravely defended his family and town during a 1906 pogrom. For this, he was put on trial. He bravely defended himself and was acquitted. This trial, however, increased Semyon's bitterness. This bitterness developed into a fatalism that would be passed on to his son (Dobkin, 1982). From his father, Vygotsky obtained the idea that both the teacher and the student need intellectual

freedom. However, because of what his father went through with Czarist pogroms and because of his subsequent bitterness, Vygotsky also received the idea that life is a constant struggle that ends in death. Vygotsky would extend these ideas of freedom and fatalism into his research and work.

Vygotsky's father led the cultural activities of Gomel. He and his wife established the local public library, whose books Vygotsky "avidly devoured" (Yaroshevski, 1996, p. 330). The couple provided a warm, intellectually stimulating atmosphere for their children. This influenced Vygotsky to concentrate on the importance of the "social other" but also to insist that the "social other" encourage free thinking.

In the evenings, Vygotsky's father and mother would hold cultural sessions in the dining room around the samovar. "These conversations would play a decisive role in the children's cultural formation" (Blanck, 1990, p.32). When the children became older, their parents encouraged them during these meetings to either refute or endorse the ideas of Spinoza, Hegel, Nietzsche, Spencer, and Tyler. The father's study was always open to the family, a habit Vygotsky would later continue with his own family. Vygotsky, his siblings, and friends would enjoy playing and studying in there (Vygodskaya, 1996). The territorial restrictions, strict quotas for entrance to the university, prohibition from many professions, and permanent threat of a pogrom, contributed to the closeness of the family and community of Gomel (Blanck, 1990).

However, after Vygotsky was invited to become a member of the Psychological Institute in Moscow, the family would move. Vygotsky's father moved to Moscow and become head of the Commercial Bank of Moscow (Vygodskaya, 1984). After his death, Vygotsky's mother would move in with her son, Lev, and his growing family. The small,

basement, one-bedroom Moscow apartment became crowded – but it was also filled with love.

Vygotsky's mother, Cecilia Moiseievna, was a licensed teacher who resigned to devote all her time to taking care of her family and home. From his mother, Lev Vygotsky received his initial knowledge of German (Gita Vygotskaya 1981 conversation in Wertsch, 1985). She also introduced him to the poet Heine and the philosopher Spinoza (Blanck, 1990). From his mother, Vygotsky picked up a love of literature, poetry and drama. He preferred, however, tragedies. This came from his father's bitterness and his country's repression (Dobkin, 1982). Pushkin's tragic works would become Vygotsky's "favorite" literature (Blanck, 1990. p. 33). He also enjoyed analyzing *Hamlet*. When one reads the few papers that have survived of Vygotsky, one sees his fatalistic view of life. He got this view from his father, not his mother. Unlike Piaget's mother, people remember Cecilia for having a "...very gentle personality" (Wertsch, 1985, p. 3). It was from his mother that Vygotsky developed his love of literature and its analysis.

Building on this love of language and literature, Vygotsky would hold discussion groups with his sister, Zinaida, cousin David, and brother Dodik. When they got older, they would put on plays, have literary readings, and hold debating societies with neighbor Semyon Dobkin. They became so close that David and Dodik formed with Lev the Gomel "troika" (van der Veer & Valsiner, 1991, p.5-6; Dobkin, introduction in Levitin, 1982). Dodik died of tuberculosis in Kiev in 1919 and was Vygotsky's favorite brother.

After Dodik's death, Dobkin replaced him in this troika. Zinaida was to become a prominent linguist and co-author of several foreign language dictionaries. David also

became a linguist and philologist. He introduced Vygotsky to the Esperanto movement, that tried to spread a universal language around the world, and became a competent poet. David studied at the University of Petrograd, where he joined a group of young linguists who came up with the theory of reforming literature by studying the play of language forms.

Since language always interested Vygotsky, David shared this idea with him. Vygotsky would remember it when he was developing cultural-historical theory. Seymon Dobkin, Vygotsky's childhood friend, later said that Vygotsky came up with the idea of construct formation and that language could be a tool of learning from his studies of philology. When Stalin came to power, the Esperanto movement was suspect. David went to a gulag camp where he died in the early 1940s (van der Veer & Valsiner, 1991). Dobkin would later help Vygotsky run the Ages of Days publishing firm and also assist him in putting on theater productions and literary discussion groups. Dobkin would survive both World War II and Stalin's purges to help write the first biography on Vygotsky (Levitin, 1982).

Language was important to Vygotsky. He read Hebrew, Latin, Greek, French, German, and English. Vygotsky, however, refused to speak non-native languages because his pronunciation "...did not live up to his own high standards" (Vygodskaya in Wertsch, 1985, p.233). Starting in 1920, he would build upon the linguistic ideas that his sister, Zinaida, gave him to argue that children originally use speech for social reasons; although, they eventually internalize language as well. This new internalization, Vygotsky would later call "inner speech." Vygotsky believed that inner speech made

thought processes more efficient and abstract than they were before (van der Veer and Valsiner, 1991, p. 559).

Conclusion

Considering all the factors that influenced Piaget and Vygotsky, the social factor had the greatest influence on both men. Without the influence that their hometowns, parents, siblings, friends, mentors, and teachers had on them, Piaget and Vygotsky would never have created their respective pedagogues. Piaget's family adversity caused him to believe in solitary inquiry of the learner while still a child. His lack of close childhood "buddies" his own age and his lack of closeness to his sisters or classroom teachers made him reject a "social other" as an instructor early in life. Vygotsky, on the other hand, began in early childhood to believe in the "social other" and communication as a teaching tool because his family, friends, siblings, classroom teachers, and mentors were close to him and very helpful. It was within this social factor that both men encountered philosophy, and that was to have an impact upon their work.

Philosophy

The fathers of both Piaget and Vygotsky introduced their sons to philosophy; namely, Kant and Hegel. Both fathers and sons accepted Kant's union of empiricism and rationalism by use of the scientific method. Both also accepted Kant's theory that man can determine his own history. Kant presumed that all knowledge enters as perception and all knowledge begins in experience. However, one must introspect on this. One must shape perception by the structure of one's consciousness (Tom Schaeffer, personal communication, June 18, 1998). Both Piaget and Vygotsky believed Kant when Kant postulated that man can find reason via the will, that man can become his own god, and

duty exists for its own sake. These ideas formed the basis for the life work of both men.

Both Piaget and Vygotsky used Hegel's dialectics of thesis, anti-thesis, and synthesis in their ideas. Hegel also wrote that man's reason is in constant flux (Montangero & Maurice-Naville, 1997). Piaget used Hegel's philosophy to explain the process of perception, assimilation, and equilibration. Vygotsky used it to explain how communication and the socio-historical march of knowledge prove Marx and Engles' dialectical materialism correct.

Piaget.

Piaget's *The Mission of the Idea* (1915) and *Recherche* (1918) show the influence of socialism upon him. However, it was more from his mother's influence than that of Karl Marx that Piaget became a socialist. When Stalin began his terrible dictatorship with its many purges, Piaget was to forego socialism all together, but not before he rejected established Christianity in favor of philosophy.

The philosopher Henri Bergson had a large impact upon Piaget and was the direct cause of Piaget's first novel, *Reschere*. Henri Bergson was a French anti-intellectual philosopher. Piaget wrote that Bergson's parts-in-the-whole schema created a bridge in Piaget's mind between science and philosophy (Piaget, 1952). Bergson's idea of creative evolution laid the foundation for Piaget's genetic epistemology (Balestra, 1980). It was Bergson that wrote the intellect secures a perfect fit to the environment "by a process of adaptation" (Balestra, 1980, p. 416). Piaget would later elaborate on the details of this adaptation to form the idea of equilibration. Piaget came to believe Bergson's idea that organisms are true wholes that are not explainable as the sum of their parts. Bergson's

idea that biological transformations led to the birth and process of intelligence formed the basis of Piaget's stages of development.

While searching for a way to avoid a dualistic theory of knowledge, Piaget was influenced by the Franco-German philosopher Emile Meyerson. Meyerson's major work, Identity and Reality, taught Piaget that there was a way to fuse logic and time. Meyerson wrote that identity was the logical foundation of thought. Piaget realized that there had to be something more than the principle of identity to account for learning. Piaget found his answer in the idea of equilibrium or a reciprocal balancing in the organizational interactions among the parts of a structure (Balestra, 1980).

Another philosopher who influenced Piaget directly was Auguste Sabatier. Sabatier rejected established, denominational Christianity. Sabatier advocated a "scientific" theology that would use logic and scientific investigation to discover theological truths. Thus, Sabatier advocated a notion of "evolution of dogma" (Balestra, p. 414). It was Sabatier that influenced Piaget to write in *Recherche* that the only God was the one within you. "Sabatier studied all phenomena in their natural succession and taught Piaget to observe each fact as it appears because the order of the appearance determined its truth and value" (Vidal, 1994, p. 127).

However, it was the influence of Arnold Reymond that led Piaget, according to his own recollection, to abandon Bergsonism (Piaget, 1966), but not the free thinking theology of Sabatier. Reymond was a professor of philosophy at Neuchatel's gymnasium and university. He carried out studies on Greek science while also teaching philosophy, the philosophy of science, psychology, mathematics, and logic.

Reymond was a colleague of Piaget's father and was also Piaget's mathematics professor. His lectures "left Piaget with a lasting respect for the value of a historic-critical approach and the need for an interdisciplinary work" (Balestra, 1980, p. 420). Reymond's holistic approach to understanding mathematics was instrumental in the development of genetic epistemology. Reymond showed Piaget that logic could provide the key to discovering the evolution of human thinking (Balestra, 1980). Piaget always considered Reymond one of his masters, and it was Reymond's persuasion that persuaded Piaget to reject Freud and Jung (Piaget, 1952). Reymond demonstrated to Piaget that the problem of a biological species is approachable as a logical problem. What Reymond failed to do, however, was to provide the concrete experimental grounding that would prove his ideas correct. That grounding was to come for Piaget in Paris. For Vygotsky, it was the Russian Revolution that would move him not only to reject his religion but also to change his philosophy.

Vygotsky.

Vygotsky received his interest in Hegel and Kant from his father. Vygotsky built his cultural-historical theory on Hegel's idea of the dialectic and Kant's idea of the will and perception. Influenced by Marxism during the Russian Revolution, Vygotsky put learning into a historic and cultural context, because "...that is how Karl Marx presented communism" (Daniels, 1993, p. 18; Razmyslov, 1934, pp. 78-86). This idea of the dialectical materialism became integral to Vygotsky's theory on language as a tool of social and learning activity.

In addition, in an effort to bring psychology into line with Marx's dialectal materialism, Vygotsky saw consciousness as a human labor activity. He theorized that

learning was social in origin and evolutionary in scope in order to endorse Marx's and Engels' social determination theory as written in their Sixth Thesis on Feuerbach.

Vygotsky would also see language as a tool for mental activity in order to make language an analogue of Marx's "kapital" (Wertsch, 1985, p. 49).

During Lenin's rule, communism promised freedom. Indeed, the doors that were closed to Vygotsky during czarists' times now were opened. For example, he could now teach in a public school and Kornikov invited Vygotsky to the Psychological Institute in Moscow. This new freedom made Vygotsky "embrace Marxism" (Yaroshevsky, 1996, introduction). While Gita Vygodskaya, Vygotsky's daughter, claimed in 1988 that her father was "...always a soviet" (Vygodskaya, 1994), some researchers believe that it wasn't until Vygotsky returned to Gomel after his brother's death in Kiev, that Vygotsky had time enough to reflect and decide to embrace communism. Vygotsky's earlier experience with Hegel made this not difficult to do. Once Vygotsky decided to accept communism, he had to defend it. Vygotsky put learning into a historic and cultural context because that is how Marx presented communism (Razmyslov, 1934). This was, of course, before Vygotsky was to reject his faith.

Conclusion.

Both men made the decision early in their lives to reject their organized religion in favor of philosophy. Piaget, while a teenager, decided to reform philosophy of its irrational nature through use of science's logic. Vygotsky, while a young man, decided to embrace communism. Both men were well-read in philosophy and were heavily influenced by it. However, neither one really rejected the roots of his faith. The heart of Judaism is revealed in Isiah's "And what does the Lord require of thee? To do what is

just, to show constant love, and to walk in humble fellowship with your God” (Old Testament). The heart of Christianity is the Golden Rule. Both men, and their respective pedagogues that were based on the leading philosophies of their day, followed these dictates. Thus, the question remains, did they really reject their God – or only the denomination into which they were born.

Religion

Piaget and Vygotsky were both raised in moderately religious families that encouraged free thinking. However, by the time they started their professional careers, both men would reject the established faith of their childhood. Nevertheless, the values that those faiths imparted in early childhood would stay with these men their entire lives and be instrumental in the creation of their respective pedagogues. For example, both the Jewish culture and the Protestant faith value education. Indeed, the Jewish Midrash states that, if a classroom is burning, the students first save the life of their teacher before saving their own. In America, the Calvinist Puritans established the first public schools so that children could learn the Bible.

Piaget's Protestantism had an intense individualism (Van Biema, E., 1908, p. 80), so it is not unusual for Piaget to discover the independence of the learner. Judaism values the individual. However, it is the social milieu that educates and nurtures the individual. The individual functions within a social milieu; Thus, Vygotsky would discover the need for a "social other" and a social context for learning. Nevertheless, raised in faiths that valued good education, it is not surprising that both Piaget and Vygotsky would not only do the same, they would also strive to improve education through the creation of better pedagogues.

Piaget.

Piaget's French-Protestant Calvinism influenced him to try to help others. He believed in Calvin's work ethic and modeled the virtue of hard work his entire life. It was both his faith and his mother that caused Piaget to become a Christian socialist for a few years in his adolescence. He wanted to find scientific reasons for morality, and that is why he embarked on the effort to create genetic epistemology (Piaget, 1952).

In 1983, Paul Sants wrote *Jean Piaget's Attitudes to Education* which appeared in *Jean Piaget: an Interdisciplinary Critique*. According to Sants, Piaget's French-Protestant Christianity and the influence of Christian teachers and mentors prompted his work and led to the conception of his ideas. It was the combined Christian influence of Piaget's family, clubs, friends, mentors, and church -- especially the studies for confirmation -- that led Piaget into epistemology.

In Piaget's hometown, youth often had a crisis of faith. But the Christian people that surrounded Piaget enlarged this crisis. The result was that Piaget would have two nervous breakdowns (one in 1915 and another one in the winter of 1917-1918). Because of these two nervous breakdowns (the first was religious and the second was philosophical), Piaget would discover accommodation and equilibration. Noting how the mollusks and snails adapted to environmental crises in the Neuchatel's Museum of Natural History's laboratory, Piaget used the example of perception of a problem, internalizing the problem, and acting out a solution to the problem to overcome both mental breakdowns. The result was two creative works.

The first crisis resulted in his *The Mission and the Idea* in which he rejected a personal Christian God in favor of a wedding of philosophy with science. The second

crisis resulted in *Reschere* in which he decided to eliminate the irrational from philosophy, and the heart of philosophy is epistemology (Piaget, 1976). The problem was, Piaget reasoned, that philosophy was not rational. He would use his knowledge of science, which he deemed rational, to purge philosophy, and theology, of its irrational nature.

Fernando Vidal (1989) held it was Piaget's Christian beliefs that motivated him to create an epistemology that was "a moral enterprise aimed at making possible human individual and social salvation" (p. 190). Piaget was an offspring of Swiss Protestantism, which was highly liberal at the time. As such, Piaget "shared with many of his peers the ideal of modeling himself upon the heroic image of Jesus Christ" (Vidal, 1989, p. 191). The destruction of World War I caused followers of this liberal Protestantism to attempt an establishment of a new order that saw faith as governed by the same psychological laws that governed other human experiences.

Vidal cited Piaget's prose, *The Mission of the Idea*, as proof that this interpretation was correct. This poem castigated intellectualism as a betrayal of the mission of theology and called upon the idealism of youth to meet the challenges of wartime circumstances. In that 1915 work, Piaget saw himself as the young man who was to work for the realization of the Idea [a Christian epistemology] on earth. "Honor to him who meditates, alone, in his silent room, and then thrusts into full light the young idea that will dash through the world, as the storm agitates the sea." (Piaget, 1915, p. 11)

Piaget's father was an agnostic but his mother was a Calvinist Protestant. While briefly embracing his mother's religion through confirmation classes, the prior nervous breakdown would lead Piaget into becoming an agnostic himself. Thus, Piaget replaced

theology with philosophy; specifically, a philosophy purified by science. However, his faith never fully left him. While Piaget rejected organized theology, the basis or heart of that theology (mainly, its roots or ethics) would form the basis of genetic epistemology.

Vygotsky.

Religion did not have as much of an impact upon Vygotsky as it did upon Piaget. First of all, this is because Vygotsky's parents did not practice their religion as much as Piaget's mother did. "Although the Vygotsky family were not very religious, they held to the Jewish traditions. Thus, young Lev Vygotsky received a traditional Jewish education, reading the Torah in Hebrew, delivering a speech at his Bar Mitzvah, and so on. The frequent references in his work to the Bible can be understood in this context" (van der Veer & Valsiner, 1991, p. 4).

Vygotsky became interested in Jewish culture at an early age and started to identify to some extent with the history of the Jewish people (Vygotsky, 1916). External circumstances encouraged this interest. For example, Vygotsky witnessed the ignominious return of the Jewish members of the Russian army to Gomel. This return took place after an incorrect rumor had been spread that Jewish soldiers were not trustworthy in war time (Levitin, 1982, p. 27). Lenin demanded that true soviets reject organized religion, which Lenin saw as "the opium of the people."

Vygotsky spent seven years in Gomel as a school teacher pondering what to do about his faith. With Lenin opening up avenues of opportunity to those who agreed to be soviets, Vygotsky would reject his formal Jewish religion, but the precepts that it taught him would remain within him (Vygodskaya, 1984). Judaism is a very ethical, socially concerned theology. These roots of his faith would remain with Vygotsky his entire life.

This, plus his interest in his Jewish heritage, would blend with other experiences in Vygotsky's life to create his idea of the socio-cultural-historical context of learning.

Conclusion.

Both Vygotsky and Piaget may have rejected the man-made aspects of their respective theologies, but they never rejected the heart of their faiths. However, recognizing that their nations could improve the lives of their people, both men chose education as the method by which this could occur. This drive to improve their nation's education was encouraged by what happened within that field in their own lives.

Arts/Education

Developing good writing and thinking skills is part of a good education. Both men received two types of education: formal and informal. The formal and informal education that Piaget and Vygotsky received was excellent, but it was the informal education that gave both of them the valuable skill of being able to write well. Without this skill, they could not have conveyed their ideas adequately enough for those ideas to be accepted.

Like Piaget, Vygotsky started writing at an early age. Both men wrote their first works at ten years of age. Vygotsky first wrote an analysis of Tolstoy's Anna Karenina. However, this first essay was destroyed during World War II when the Germans attacked Gomel in 1943. However, the knowledge that this critique gave Vygotsky would be used for his doctoral dissertation. The first writing of Vygotsky that survived is his critique of Shakespeare's "Hamlet." This was started when he was ten but was not finished until he was nineteen (Blanck, 1990). These two works would eventually be joined by other

authors to become his doctoral dissertation, "The History of Art." Piaget would write about an albino sparrow. It was published despite his young age and Piaget recalled that "I was launched!" (Piaget, 1952) Thus, at an early age, both Piaget and Vygotsky started honing their writing skills -- a trait that is necessary if one wishes to get research published.

Outside of teaching him how to write well, the arts did not influence Piaget, but they did have a profound influence on Vygotsky. Vygotsky received his love of literature from his mother. Vygotsky's childhood "play" built upon that love. Vygotsky would put on dramas and hold literary discussions and debates with his sister Zinaida, brother Dodik, and "troika friends" David and Dobkin. There were many family readings of great literature around the dining room samovar during the long winter evenings. In addition, Vygotsky, his siblings, and his friends took advantage of the public library that Vygotsky's parents created in town. So, Vygotsky was able to immerse himself in the well-written word early in his life and this would foster his idea that language was the tool of learning.

Formal education was to have a remarkable impact on both Piaget's and Vygotsky's ideas. This is especially true when considering Piaget's and Vygotsky's higher education. If it were not for their university studies, both men would have remained as either an excellent natural scientist (Piaget) or a great teacher in literary analysis (Vygotsky). How was it that both, instead, became noted psychologists? How did Piaget and Vygotsky change fields of study? Piaget's degree was in natural science and Vygotsky's was in literary analysis. What happened that made them both enter the field of psychology?

The answer to those questions lies in the fact that both of their universities considered psychology part of the discipline in which both men were getting their university instruction. Without psychology being considered part of philosophy at the University of Zurich and without psychology being considered part of history and philology at the University of Moscow, Piaget and Vygotsky would never have been able to create their respective pedagogues.

Fernando Vidal, in his 1994 book, Piaget Before Piaget, points out that Piaget "...was enrolled at the University of Zurich, in the department called Philosophy I, during the 1918-19 winter term (October to March). The professors he [Piaget] mentions in connection with experimental psychology, Arthur Wreschner...and Gotthold-Friedrich Lipps...also taught courses in philosophy, pedagogy, and mental development" (Vidal, 1994, p. 224).

Mikhail Yaroshevski explained in his 1994 work, Vygotsky and His Position on Psychological Sciences, that psychology in those days meant the study of individual consciousness, and because of this, the analysis of literature was part of psychology. The Institute of Psychology opened as part of Moscow University's Department of History and Philology the same year that Vygotsky became a student there. The psychologists shared the same campus building with the historians and philologists. Therefore, because of his interest in the humanities and because literary analysis was considered part of psychology, becoming a psychologist was not that big of a move for Vygotsky to make.

In addition, Vygotsky also studied simultaneously at Shanavsky University. His primary interest was literary criticism. At that university, psychology was "...taken to

mean the study of individual consciousness" (Yaroshevski, 1994, p. 35). This consciousness also expanded to art, history, and literature. Vygotsky would expand the study of individual consciousness while at Shanaivsky University, to the study of the individual's dependence on the historical development of world culture (Yaroshevsky, 1996). Thus, it was a natural or logical step for Vygotsky to move from literary criticism to the study of how learning takes place in a socio-historical context.

Two teachers impacted Vygotsky and his ideas in a very important manner. The first teacher was Solomon Ashpiz because his Socratic method of teaching not only scaffolded Vygotsky up to the top of his ZPD, it also opened the door for Vygotsky to attend the university in Moscow. Ashpiz's teaching endorsed four ideas that Vygotsky had started to form in his childhood that would become major factors within socio-historical theory; namely, language as a tool of learning, the "social other" as a factor for learning, the ZPD, and the socio-historical context of learning. The other teacher was Gustav Shpet. He was a professor at Shanaivsky University who finalized for Vygotsky the psychological aspects of language. Now Vygotsky had the words to go with his ideas to form the concept of language as a tool of learning. Without these two teachers, Vygotsky might never have conceived of socio-historical theory.

In conclusion, without the flexibility within the curriculum of their respective universities, Piaget and Vygotsky might never have made their significant contributions to pedagogy. This is interesting because Piaget's childhood classrooms were such unhappy places that early in his life, he resolved to find a better way of instruction.

Piaget.

Piaget attended the local Latin School. He then went on to the University of Neuchatel where he received his baccalaureate in natural sciences and became ABD [all but dissertation] in philosophy. Piaget's classroom teachers were ineffective (Piaget, 1952). Despite this, Piaget's family had enough prominence that there were those in the community who took over Piaget's informal education. This was a good thing because Piaget's early formal education failed him but it was his informal education that taught him how to think and organize.

Thus, Piaget benefited much more from his informal education than Vygotsky. Piaget's first literary critic was his father, who criticized two of Piaget's early works. In 1905, Piaget wrote about a new car he invented called the "Autovap." In 1907, Piaget wrote on his first research in the field of biology and called it, "Our Birds." Arthur's criticism of both of these works that they were too unstructured, had too little analysis, and were of no scholarly value, a view that would have crushed a son of lesser internal strength than Piaget. Instead, it galvanized Piaget to put more effort into his writing skills. He wrote in 1912 *L'albinisme chez la Limnaea stagnalis*. This research on an albino sparrow was so well written and researched that adult readers did not believe a child had written it (Piaget, 1952 & 1976). In fact, the director of the museum of natural history in Geneva offered Piaget a job as curator (Piaget, 1952).

Piaget's informal education also included all the work that he did for Paul Godet, who was director of Neuchatel's Museum of Natural History and hired the young man to help him in his mollusk department and paid him in specimens. This work, besides classifying specimens (i.e., extra mollusks and snails for Piaget's own personal

collection) for Godet, included solitary learning. Piaget did his first independent research, field investigations, and writing while under the tutelage of Godet.

When he became a teenager, the Jura Club and Friends of Nature also encouraged and applauded Piaget's independent biological research. In his autobiographies, Piaget criticizes his own classroom teachers. They were not very good; by that, Piaget meant that the classroom was "a frustrating place" (Sants, 1983, p.89). There was no independent study. All instruction was from the top down and mainly dealt with lecture and rote memorization. On looking back, Piaget could only wish that he had spent even more time on interests of his own choosing rather than those chosen for him by his teachers. However, later, Piaget conceded that there were some teachers who allowed the pursuit of personal interests.

Self-regulation, it can be seen, had appealed to Piaget "...at a very early age" (Piaget, 1952, p. 352). However, because of his unhappiness with his formal education at the Latin School, Piaget would write "...against trying to transform the child's mind from the outside by authoritarian means" (Sants, 1983, p. 90). In his 1932 work entitled, *Moral Judgment of the Child*, Piaget would write that "It is idle...to try and transform the child's mind from outside, when his own taste for active research and his desire for cooperation suffice to ensure normal intellectual development" (p.392). Piaget's argument against traditional classrooms may have its origin in his unhappy home life, because Piaget would also write against parental instruction. "Parental 'mistakes' can only too easily disturb [sic]. Much better for the child's social interaction to be with 'collaborators'" (Piaget, 1932, p. 393). Thus, because of his unhappy experience with most formalized teaching (be it at home or in the traditional classroom), Piaget would

form the concept of an inactive teacher who would allow the child to engage in independent study. Piaget called this idea "self-regulation."

However, remembering his mother's mental illness and his own two breakdowns resulting from "unstructured thinking" (Piaget, 1952), Piaget would have the teacher acting as a diagnostician. The goal for the teacher was to correctly create a "...classroom environment that was set at the child's stage of development" (Sants, 1983, p 88). Piaget successfully tested this idea when he was a diagnostician in Paris graduating from the University of Neuchatel and doing a semester's work at the University of Zurich.

Vygotsky.

Vygotsky also benefited as much from a good, informal education as he did his formal one. It was his early formal education that taught him how to think and analyze. By the time he was fifteen, Vygotsky earned the title, "the little professor" (Blanck, 1990, p. 34) because he had generated intellectual discussions among his friends. Because of the ZPDs set up by his parents and the later ZPDs set up by both his "troika" and siblings, Vygotsky's interests in theater, history, and philosophy were early integrated (Blanck, 1990). During the same time period, Fanya and Semyon Dobkin (neighborhood friends) and Zinaida, Vygotsky's sister, invited him to preside over a Jewish history circle. "This activity lasted for two years and eventually led to the study of the philosophy of history" (Blanck, 1990, p. 34). This study, when coupled with the study of Hegel that his father had already introduced him to, must have stimulated his prior adherence to Marx, a connection not at all arbitrary (Cohen, 1978).

Vygotsky had private tutors until he attended the last two years in the gymnasium. Vygotsky's parents had first enrolled him in a public gymnasium. Then, they discovered

the teachers there were not very good (Dobkin, 1982), and enrolled him in a private Jewish gymnasium. There, Vygotsky was such a good scholar that, despite being in the gymnasium for only two years, he won its gold medal for academic achievement and was placed on the lottery list for entrance into the University of Moscow. As stated earlier, this achievement was due to his childhood tutor, Solomon Asphiz, who taught by the Socratic method. This method was to later result in both the concept of the ZPD (Wertsch, 1985) and contributed to Vygotsky's idea that language is the tool of learning. Vygotsky, early in his youth, was able to accept the concepts of the "social other" and scaffolding because of Asphiz's teaching skill (Dobkin, 1982). "It was Ashpiz's pedagogical technique which influenced Vygotsky to recognize the use of language by the "social other" can promote well-developed, inquisitive minds" (Wertsch, 1985, p. 4).

A method of czarist persecution of the Jews was that, while Vygotsky was sitting for his entrance examinations to the University of Moscow, a lottery was established for all Jews to enter the University of Moscow. Thus, Vygotsky's gold medal did him little good. "No more than 3 percent of student bodies [either at the Imperial University of Moscow or Saint Petersburg University] could be Jewish" (Wertsch, 1985, p.5). However, Vygotsky won a spot and, at his parents' insistence, decided to study medicine.

However, once enrolled, Vygotsky decided to switch to law because the only Jews allowed to live outside the Pale of Settlement (a restricted area in eastern Russia set by the Czar to prevent Jews from living throughout his realm) were those who were lawyers. Therefore, Vygotsky would obtain his law degree from Moscow University (Newmann & Holzman, 1993). Next door to that university, however, was the Psychological Institute in which Ivan Schenov researched reflexive behavior. Vygotsky

attended Schenov's lectures. Schenov's ideas would lead Vygotsky, when he began his own research in the Gomel psychological laboratory that he built, into terming "...cognition as...the reflex of reflexes" (Yaroshevski, 1996, p. 38). This led Vygotsky into delivering his 1924 paper at the Second Psychoneurological Congress. This address, as earlier explained, resulted in an invitation to work at the Psychological Institute in Moscow – and a place in history.

Vygotsky also enrolled in a new Moscow university called Shanaivsky University. This was an unofficial school that sprang up after the Czar's Minister of Education expelled most of the students "...in a crackdown on an anti czarist [sic] movement" (Wertsch, 1985, p. 6). In protest, more than a hundred professors walked out after the students' expulsion and created a free-thinking university, Shanaivsky University (Dobkin, 1982). Since literary analysis, philology, and history always interested Vygotsky, he enrolled in Shanaivsky University to study those subjects. "Vygotsky gained much more from the atmosphere of that university [Shanaivsky] and from mixing with the students and teachers there than from his studies at the law department" (Dobkin, 1982, p.30). The professors, especially Dr. Gustav Shpet, encouraged Vygotsky to write about the role of the "social other." That role would contain the goal of enabling students to internalize information given by the "social other" and that ability would enable the student to create a new, and improved, construct (Wertsch 1985).

At Shanaivsky University, Vygotsky also picked up the idea that, thanks to the "social other," society and cognition created an active, ever-upward evolutionary spiral of knowledge. Also while attending that university, Vygotsky and his sister Zinaida

attended lessons by Shpet, who was a noted student of Humboldt. Those lessons sensitized Vygotsky to the psychological aspects of language (van der Veer & Valsiner, 1991). Vygotsky remembered that, as a teenager, he had read Potebnya's book entitled *Thought and Language*.

This book was Vygotsky's first acquaintance with psychology. Potebnya's ideas about language as the microcosm of thought and as an instrument of constructing man's inner world "...guided Vygotsky's future studies" (Yaroshevski, 1996, p. 36). Vygotsky wedded Potebny's ideas with the teachings of Shpet to give birth to the idea that communication (through reading, hearing, or observing body language) was the tool of instruction.

Vygotsky also had a good, informal education while in Moscow. This is because Vygotsky set up ZPDs there. Moscow was an exciting place for a young intellectual man from a medium-size town, as innovative trends in the sciences, humanities, and arts were emerging. Vygotsky's closest friend during his university days was Nikolai Efros, who believed that Vygotsky's interest in literature, especially the tragedies like "Hamlet," was because that is how Vygotsky gained insight into his own inner self, which suffered from "angst" or inner conflict (Yaroshevski, 1994, p. 44-45). Thus, it was Vygotsky's formal education, coming to a head in Moscow, that enabled Vygotsky to find a way to channel out his inner angst. Vygotsky would put his energies into a new type of pedagogy that could be used to prove Marxism as correct and the Russian Revolution as justified.

Conclusion.

In conclusion, it was the education of Piaget and Vygotsky that gave them the means by which they could relieve their inner psychological tensions through the

development of the new ideas that compose their respective theories. In the process, both men realized that they might be preventing such "angst" from occurring in others. Indeed, if it had not been for the adversity within their own personal lives, neither Piaget nor Vygotsky would have had enough creativity to make their significant contributions to education. The depth of their angst (psychological, physical, and social) reflects the depth of their ideas. In order to overcome, they had to expand their intellects. The observation of their respective intellectual expansions allows one to trace the origin of their ideas.

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