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PORTRAIT OF A SCHOLAR: JASON WALTER BROWN

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Prof. Jason W. Brown, M.D.

SUMMARY

This biography presents a half century of the commitment of Prof. Jason W. Brown, M.D., to the development of neurology, neuropsychology and philosophy of mind. For over 30 years clinical professor of neurology at New York University Medical Center, Jason Brown is best known for his work in neuropsychology and process philosophy, especially time, change and related issues in the philosophy of mind. He is the author of 11 scientific monographs and over 200 peer-reviewed articles in neuropsychology and theory of mind. His most recent book is *Love and Other Emotions* (2012). The biography also summarizes the main features of microgenetic theory, especially the account of consciousness, of the transition from self to image, act and object, the epochal nature of this transition, and its relation to introspection, imagination and agency. The affinities of microgenetic theory to many aspects of process thought should be evident to readers of this journal, but the theory, which was developed in pathological case studies, rests on a wealth of clinical detail. In brief, the micro-temporal transition from archaic to recent formations (distributed systems) in the phyletic history of the forebrain constitutes the absolute mental state, with consciousness the relation of self to image and/or object. The reader will also find here the overlap of states, the continuity of the core over successive states, and subjective time experience.

INTRODUCTION

It is the usual practice, for perhaps obvious reasons, to include in a volume such as this special issue of *Acta Neuropsychologica* a biographical sketch of the honoree. As a general rule, such a biography is laudatory in tone, brief, and focused on scientific or scholarly achievements, with a minimum of personal information, rather as though one were to read off the high points from the person's CV. A few anecdotes may be added to demonstrate that the honoree is/was a good colleague, teacher, raconteur, or what-have-you, but the private person is largely left untouched. The present study is different by design, in a way that particularly fits its subject. According to process thinking, thought emerges from life, bottom up, and then forms in memory an essential part of the matrix of remembered experience in which not only subsequent thinking, but indeed the whole of subsequent experience takes shape. Compartmentalizing life into public and private spheres is convenient and not infrequently necessary, but it is a move made at the expense of truth. The public persona and the private individual are woven from the same fabric.

Jason Brown's theory is thus, in its own lights, inseparable from the life of the individual who developed it. That is why his biography must be just that, a *biographe*, a picture of a life (to translate literally from the Greek), based in part on memory, in part on documents, in part on reflection. Many of the quotations given in what follows come from letters, sketches for an autobiography that was never written, remembered conversations, and other such sources seldom quoted in scientific work. Whether or not this renders the present study more or less useful is, of course, a judgment for the reader.

CHILDHOOD

Jason Walter Brown was born on the first night of Passover in the early morning of April 14, 1938, in the lower east side of Manhattan, the oldest of four children. Two years later his brother Richard was born.

Though the stoops and alleys of the Grand Concourse in the Bronx have not changed much physically, the largely Jewish neighborhood is just a memory. The life Jason remembers from his childhood has gone, to be replaced by a different reality. As Jason himself puts it:

> What do I know of that dreaming child? Old men, not children, write memoirs of their childhood and the child recounted is writ of fact and fantasy by the errant hand of an aging memory. A child given stories of its childhood risks losing the original for the copy, contaminated by a time before memory could distinguish a feeling and a description, or pain and pleasure from their recurrence in symbol and metaphor, dream, imagination, all going in to what became for me, as for all children, a myth of a childhood in which I was the hero of my own imaginary tale. How am I to resurrect the self of

those early days, replaced in a parade of other children, other selves, all woven into the fabric of my being? Alas, the fragments of recall are inessential details; what I strive to recapture is unforgotten, alive, buried in the bones of my soul.

California

In 1945, the Brown family moved to Los Angeles, where Jason's father founded and developed his business. As the business flourished in California, so did the family, to which two daughters were born, Darlene and Leslie. The rising fortunes of the Brown family during this time took them from a wooden shack in Santa Monica at the close of the war to a serviceable middle class home with a separate apartment for the grandparents until Jason was 14, to an elegant 18-room manor with pool, tennis court and cabana located in the luxuriant hills of Los Feliz just below the Griffith Park observatory.

Sunny Southern California was a distinctly different place from the teeming streets of New York. During these youthful years Jason and his younger brother Richard attended a summer military school. The experience left a lasting impression on Jason – not necessarily a positive one as regards the military mentality, a theme that returned more than a decade later, when Jason was drafted into the Army during the Vietnam War.

Jason always felt, however, that his roots were really in New York. Richard, who was five when the family left their Bronx home for Santa Monica, had only vague memories of New York, though at several periods in his young adult life he returned there for a few years. Jason eventually returned to New York, and to this day is never happy for long outside the shadow of the Empire State Building.

Fig. 1. Summer military school (on the right: Jason at age 14 with his brother Richard about 12)

Father

Jason's paternal grandparents, whose surname was Bronschtein or Braunstein, came to New York in the late 1800s from Odessa. Grandfather was an intellectual, an opera lover of openly communist sympathies, one of only two children from a family of fourteen to survive the hardships of life in Russia. Grandmother, born in Poland, was a seamstress, older than her husband, who followed him in death a year later; according to a family legend, she whispered „ales a cholem [all is a dream]" as she died. Jason's father, as the oldest of three children, though not a religious man in the usual sense, faithfully performed all the duties expected of an oldest son: walked his father's empty shoes around the block to liberate his soul and said Kaddish at the Synagogue every day for two years. Samuel Robert Brownstein, Jason's father, was born in 1903 in New York. He dreamed of medical school, but with no financial support he had to work at whatever jobs he could find, and his plans were sacrificed to his strong feeling of obligation, first to his parents, then to his young family. Finally, he attended the Palmer College of Chiropracty and opened a practice in New York, but after two years he realized that he would never be happy and successful in that profession. He then launched a career in business, finally putting aside enough money to open a lingerie business of his own, "Glydon's," which prompted the move to Los Angeles. There the company prospered, and the family name was further "Americanized" to Brown.

Jason writes of his father with great feeling:

> Father was determined, decisive yet unassuming, reticent to a fault, not so much shy as uncomfortable, playful with women, uneasy with men, aloof from those who did not share his few enthusiasms, giving little of himself to friends, even family, inward, private, even reclusive, a man one might say unfit for business, better suited for solitary work, the aptitude of a physician, a writer or a scholar. His conversation with others was mostly interrogatory, inquisitive, asking of work and motivations, dismissive of his own accomplishments. With me he was all wonder and fascination, asking the most naive yet fundamental, unanswerable questions about the mind and brain, what is memory, how do we think, where do words come from, what is the nature of identity across sleep or time?... He was not literary, but with his boyish candor, gentleness of heart, reverence for the life around him, awe and sensitivity, he could have been a Haiku poet on a pilgrimage about the countryside. He too could have written that „no joyless forms shall regulate our living calendar"... This kindly businessman, without a grain of arrogance or spite, was for me inspirational as a reminder of the humility and consecration that nature requires of her votaries if, with a receptive heart, they are to be given mute instruction at the living throne of her deity.

Samuel Brown died in his sleep at 87 after years of debilitation and suffering.

Mother

From his mother's side, Jason remembers well his maternal grandmother, born in Lodz, Poland, a very round woman invariably dressed in black, long black hair in a bun, the signs of a hard life etched on her face, her Yiddish phrases. Three times widowed, she had seen her share of sorrow. At 88, bedridden with heart failure, she awoke one night to dance around the room and, like Mahler on his deathbed, sang Polish folk songs from her youth. The next morning she was dead.

Sylvia, Jason's mother, was born in New York in 1912. She later said that she could not remember a period in childhood when she was not working, beginning at age 9 in her mother's restaurant. For most of her married life, she worked with her husband at the lingerie factory. The workers, mostly women, remained close to her for twenty years after the business was sold; they showed up in large numbers at her funeral to pay her a final tribute.

By all accounts she was an extraordinary woman, smart and attractive even into her eighties, able to attract and hold the attention of small and large groups in all kinds of social settings; she was a brilliant conversationalist and widely read. Thanks to his father's scholarly bent and his mother's love of debate, Jason grew up in a home where the talk at the dinner table was more often a debate than a conversation. She encouraged competition among the children, aware that the desire to please was an unerring source of motivation. Jason recalls:

Fig. 2. Jason's parents, Samuel and Sylvia Brown

> Mother had a way of giving a compliment and leaving one still wanting approval. As a child, I showed her a poem I had written; she said it was beautiful but added, "With such talent you could make a lot of money working for Hallmark cards." An interview on television made her happy, yet she asked, "When will you be on the Merv Griffin show?" Good but not good enough. "My boys are so smart," she would say, "no one can read their books." That was to cheer us up about the low sales. Then she would suggest that we write something to make money, in my case a book on "everything you wanted to know about the brain, but you couldn't afford to ask your doctor."

At the same time, she created and presided over an oasis of warmth and love for the family and a wide assortment of friends.

Jason's mother suffered a final debilitating heart attack two months before her 84th birthday. Jason writes:

> A slow recovery for several weeks left her an invalid at home, visited daily by friends and family and bathed in the love and veneration she so much deserved. She succumbed in her sleep like my father, the peaceful death that god grants to the tzadik, the one who is blessed. Richard and I gave the eulogies. Mine closed with an apology, that a mother described by a son is not the subject of a description but the theme of a life, the blood of her biographer. She is the standard for all of the acts of my life and labors, her look of judgment, her critique and smile, are the approval, the reproach, the challenge for all my actions, the voice of my conscience, she is with me always, never in the past tense as a memory but present even now, ever with me, so much so that to finally say goodbye would be to discard the greater part of my own being, the better half of my heart, my model and guide, my companion and advisor, my sounding board, my skill, what skill I have, my reason, my star.

Of his three siblings, Jason had by far the closest relationship with his brother, Richard, who was only two years younger than he. Richard's untimely death in the fall of 2003, after a long and valiant struggle with cancer, was one of the greatest tragedies in Jason's personal life, the loss not only of a member of his family, but in many ways his closest friend as well. Jason writes of him:

> Richard may be more deserving of a biography than his admiring elder brother. He is brilliant, acerbic, witty, conversational, perhaps he tends to be easily ruffled when refuted, a family hindrance in the rough and tumble of academic life.

Richard made his career in sociology, where as Professor of Sociology and Comparative Studies at the University of Maryland he was guru to a whole gen-

Fig. 3. During the opening ceremonies of the Symposium at the University of Silesia in Katowice, Poland. From the left: Prof. Jason W. Brown, Prof. Richard H. Brown, Prof. Tadeusz Sławek (Rector, University of Silesia), Prof. Maria Pachalska (President of the Polish Neuropsychological Society), Prof. Bruce Duncan MacQueen, Prof. Piotr Wilczek (Dean of the Faculty of Letters, University of Silesia), Prof. Rafał Molencki (Dean of the Faculty of Social Sciences, University of Silesia)

eration of young sociologists, and the author of an impressive scholarly bibliography. Those who have read books by both brothers can see some important common threads in their work, though it took the appearance of the two at a conference in Katowice for them personally to understand each other's work (Fig. 3). Both of them admitted privately that this had been the first time either of them had ever heard the other one lecture, and also the first time either of them had really understood what the other was trying to do!

EDUCATION

There could be little doubt that Jason, after finishing Marshall High School in Los Angeles (where both he and his brother Richard are now listed as "Distinguished Alumni" on the school's website), would fulfill his father's dreams. As Jason himself explains, his father was

> ...a pattern for many of his generation, ambitious, often irreligious sons of hard-working European Jews, the men who built great American industries, film, fabrics, independent, defiant, opinionated - oblivious, God bless them, to deconstruction, political correctness and moral relativity – the men of Barry Levinson's fine film, *Providence*, and the moving play, *I Never Talked to My Father*, those energetic Red Queens who continuously keep moving just to stay in the same place. Their sons, the professors, shrinks, artists, writers, every one a "write-off," a business failure, but they all made their fathers quietly proud.

Jason entered premedical studies at the University of California in Los Angeles, and then after two years transferred to Berkeley, where he received his Bachelor's degree in 1959. Though in view of his chosen profession and a lifelong fascination with animals and nature he concentrated on topics related to biology, in the Berkeley years he began a much broader program of reading, in poetry, philosophy, psychology, physics and other fields that attracted his interest. Of particular importance were his studies with Ledyard Stebbins, a prominent evolutionary biologist, and Sherwood Washburn, a physical anthropologist, the traces of whose influence can be seen in microgenetic theory to this day. Some premonition of the eclecticism of Jason's interests, his broad erudition, can be seen in this gifted undergraduate, by his own admission passing many exams without ever having attended the lectures, spending most of his time on the books that he considered most important.

After graduation from Berkeley in 1959, Jason was admitted to medical school at the University of Southern California in Los Angeles. Despite the mythical rigors of medical school, his approach differed little; he ruefully tells the story of his mother intervening with the school authorities when he received a failing grade due to non-attendance, though he had passed all the examinations with the highest possible grades.

One of the few professors whose lectures he attended faithfully was Johannes Nielsen, then in his early 80s, a visiting professor of behavioral neurology at USC. It was Nielsen who focused Jason's attention on the brain. For several years, while a resident at UCLA, he often returned to sit in on Prof. Nielsen's neurology rounds.

He received the M.D. in 1963, with the intention to specialize in psychiatry. Thus the choice of an internship at St. Elizabeth's Hospital in Washington, D.C., was hardly accidental, since at that time this was the only psychiatric facility in the United States that was approved for medical training. Psychiatry (especially psychoanalysis) represents a kind of fourth strand, along with philosophy, poetry, and neuropsychology, in the fabric of microgenetic theory. The internship ended after a year, though it had been a most eventful year to be in Washington, where Jason was present for both Martin Luther King's "I have a dream" speech and President John F. Kennedy's funeral.

The internship also put an end to Jason's original intention to become a psychiatrist, especially after he was enthralled by the lectures of visiting neurologist Harold Stevens, who reminded him in many ways of his mentor, Johannes Nielsen. The fascination with mental illness and its complex brain correlates, however, colored of course by his characteristic rejection of simple answers to complex questions, has remained a significant part of his work, and accounts for his appointment in 1993 as Visiting Scholar in the New York Psychoanalytic Institute.

Jason returned to Los Angeles with the intention to obtain a post-doctoral fellowship in neurophysiology at UCLA, but after several weeks of uncertainty and false starts, having decided to apply for a residency in neurology that had just become available, he was drafted into the US Army for medical services in Vietnam.

MILITARY SERVICE (1967-1969)

The residency at UCLA ended in June of 1967, and Jason was mulling over various alternative plans for the future when his long-dreaded-but-not-unexpected draft notice arrived. After a period of uncertainty as to whether it might not be better to emigrate to Canada, Jason made the decision to serve in the Army, at the height of a very bloody, nasty, and unpopular war, whose rationale he, like many young Americans of his generation, completely failed to understand. Jason was, exceptionally, sent to a Hospital in Korea. Comfortingly his wife was able to join him , and their first child, Jonathan, was actually born in Korea.

One positive aspect of this experience, was virtually unlimited access to the resources of the National Library of Medicine. It was at this point that Jason began to focus on aphasia, accumulating by his own count 30 books copied cover-to-cover and ten cases of photocopied articles. During the second year of his military service, promoted to Major, he was sent to Letterman Hospital in San Francisco, where he enriched his library with texts from the great German pioneers of neuropsychology, such as Pick, Liepmann, and Lange. Several years later he published a translation of their important papers into English, a tribute to the impact they had exerted on his intellectual formation.

BOSTON (1969-1970)

Jason Brown's microgenetic theory represents at present (now that the influence of Luria has largely faded in the West) arguably the only intellectually viable alternative to the connectionist theories of brain function now largely attributed (not entirely fairly) to Norman Geschwind. It is no small irony, then, that at an early stage of his career Jason was sponsored by Geschwind. In 1968, upon his discharge from the Army, Jason applied for a post-doctoral fellowship in Geschwind's famous Aphasia Unit at the Boston Veteran's Hospital, and after a personal interview Geschwind chose him to fill the available post, perhaps motivated by the young man's enthusiasm for the classics of neurology. Ironically Jason would soon become one of the foremost critics of the disconnection theory of aphasia. Nevertheless, the personal relationship between the two men was not embittered by any particular animosity, so that even in his criticism Jason often expresses more respect for Geschwind's intellect than for his theory. In a review of Geschwind's last book, published posthumously, Jason wrote:

> Right or wrong, whether hammering away at a point for the hundredth time or in lively improvisation at aphasia rounds, over a drink or in a conference hall, whether in banter, advocacy or debate, he was a stimulating companion and a formidable opponent who – and it is a measure of his brilliance that one can say this – will be as much missed by his adversaries as his friends.

While at Boston Jason came to know many of the other leading figures of what is still known as the Boston School, including Edgar Zurif, Alfonso Carramazza, Eugene Green, Davis Howes, Laird Cermak, not to mention Frank Benson, Edith Kaplan, and Harold Goodglass. Despite his admiration for the rigorous research standards associated with the Boston school, Jason became convinced that the fundamental paradigm with which they operated was faulty. The Boston School of neurolinguistics was attempting to demonstrate scientifically Chomsky's hypotheses about the innate character of grammar and grammatical rules, while the connectionist theory of Wernicke and his students, revived by Geschwind, lent itself to the modular and cognitivist theories that were to become so fashionable in the last decades of the 20th century and well into the 21st. For Jason, this was all one theoretical edifice, and his was (and remains) almost the only voice of protest against the imposition of this project and its assumptions. Thus the debates in which he engaged during the Boston years constituted a crucial moment in the crystallization of microgenetic theory.

In 1970, after his stay at the Boston Aphasia Center, Jason was invited to join the staff of the famous Columbia-Presbyterian Hospital in New York as an assistant professor, with a simultaneous appointment as Director of Neurology at St. Barnabas Hospital in the Bronx. There he worked with several active neurosurgeons, including the well-known stereotactic neurosurgeon Irving Cooper. At one point it appeared that this would prove to be a very fruitful collaboration, especially when at Jason's urging Cooper performed unilateral and bilateral ablations of the pulvinar in patients with aphasia and dystonia. Jason described several of these cases (the procedure turned out to have little effect) in a series of articles, which cast doubt on Penfield's theory that the pulvinar was responsible for top-down transmission of linguistic material from posterior to anterior language areas.

Jason had increasing doubts, however, about the efficacy and moral justification of many surgical interventions, and the cooperation with Cooper began to break down. Later, when asked to see patients with anoxic brain damage following coronary bypass operations, he voiced reservations about the safety of the operations, which led him into conflict with some senior staff and ultimately with the hospital administration.

It was in 1972, during the St. Barnabas years, that Jason published his first book, entitled *Aphasia, Apraxia, and Agnosia*.

With this book, Jason began an intellectual journey that has continued consistently in the same general direction for over three decades. Each successive book has built on the foundations built by its predecessors, which in itself is a kind of model of the way microgenetic theory represents mental process, as a continual re-actualization of the past in every successive moment. In *Aphasia, Apraxia, and Agnosia*, Jason laid the foundations for a process theory of aphasia, which culminated in *The Life of the Mind* in 1988. Although the books that followed seemed to have less and less to say about the clinical material, and especially aphasia, nevertheless (as Jason reminds his readers at the beginning

of each new book) there is an important continuity of subjects, making the whole corpus a single (though enormously rich and complicated) intellectual fabric.

In an important sense, also, this first book emerged directly out of Jason's contact with Norman Geschwind in 1969, followed by the clinical work at St. Barnabas. There is an attempt to demonstrate the inadequacy of disconnection theory, though it is typical of Jason's work that this is not approached as a polemic, or even as a point-by-point refutation. Rather than "deconstruct" disconnection, *Aphasia, Apraxia, and Agnosia* demonstrates that there are better solutions to old problems, provided that we put off the blinders imposed by the received wisdom. The general trend of aphasiology, especially after the Second World War, was to compartmentalize aphasia syndromes and assign each of them to the destruction or disconnection of specific brain centers, generally identified with the discrete processors of cybernetic theory. The difficulty with this point of view is that, for all its theoretical neatness, it cannot be made to fit messy clinical reality. "Pure" aphasia syndromes almost never occur, and even when they do, the particular constellation of symptoms does not last for very long. What typically happens, however, in reaction to the dynamism of clinical reality, is not that the theory is adapted to fit the facts, but rather that the facts are cut, trimmed, and paraffined to fit the theory. By pointing out the uncomfortable fact that there are no sharp lines of demarcation over the spectrum of clinical pathology, and emphasizing continuity instead of boundaries, Jason was taking a stand in defiance of a powerful establishment, whose power is only now beginning to show signs of weakening.

Another important contribution of *Aphasia, Apraxia, and Agnosia*, implicit in the very title, likewise consists in a deliberate transgression of boundaries in search of continuities. This is the observation that the course of symptoms in these three neurological syndromes reflects a parallelism – or rather, an identity – of mental process in the areas of speech and language, action, and perception. In clinical reality it is difficult not to notice that these syndromes often co-occur, a fact which disconnection theory passes off by attributing it to the purported physical proximity of processors and pathways affected by the same lesion. In microgenetic theory, by contrast, a lesion produces a disruption in the unfolding of mental process at a particular moment, and it is the moment that defines the symptom. Disruption of analogous moments in the creation of an object in perception, of a behavior in action, or of a speech act in the language system, will produce specific, and yet fully analogous syndromes of agnosia, apraxia, and aphasia, respectively. The basic idea, which is the foundation block for microgenetic theory, is that the progression from semantics to phonology in language, from object concept to object form in perception, and from action plan to implementation in motor behavior, is not only identical in all three domains, but also identical in the relation to stages in the evolution of the forebrain.

PARIS

In 1974, two years after the publication of *Aphasia, Apraxia, and Agnosia*, Jason resigned his position at St. Barnabas, and spent a brief but fruitful period at the Columbia University Medical Center working with Prof. Joseph Jaffe in the Department of Psychiatry. After one year, he received a fellowship from the Foundations Fund for Research in Psychiatry to spend a year at the Centre Neuropsychologique et Neurolinguistique in Paris, founded and headed by Henri Hecaen, one of the leading, though largely forgotten figures in the history of neuropsychology (Fig. 4).

Although he was not an easy man to like personally, Hecaen inspired Jason's respect by the breadth of his learning and experience, along with his dedication to a method and approach that avoided theory in favor of thorough, nuanced description of concrete symptoms. As Jason put it, "Hecaen saw the whole of the elephant, albeit as an assembly of parts, while the psychologists worked on the separate quarters." Much of his work at the time when Jason was working in his center was focused on the right brain-left brain asymmetry with which his name is mostly associated today. Although disagreeing with many of Hecaen's conclusions, Jason found that the issues he raised could be usefully addressed from the perspective of process theory, and his approach to asymmetry as a phase in microgenesis, rather than a fixed constraint of brain structure, was worked out in detail at this time (see also Pachalska et al. 2012). The idea that the specification of functions to left and right hemispheres is an example on the macro scale of the way a mental state is sculpted in microgenesis is one of the basic insights of microgenetic theory.

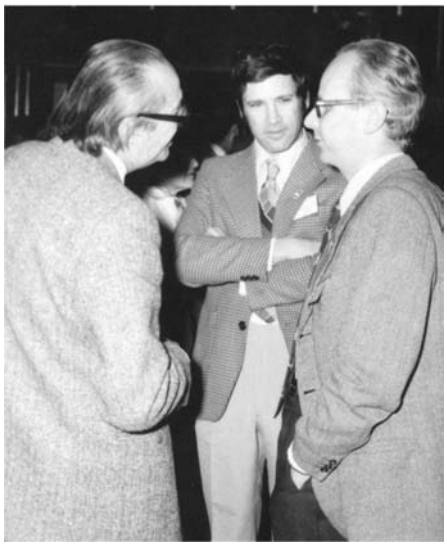

Fig. 4. Prof. Jason Brown (center) in conversation with Prof. Henri Hecaen (left) and Prof. Luigi Vignolo (right)

Upon his return from Paris, Jason began his professional association with the New York University Medical Center (he was promoted from Clinical Associate Professor to Clinical Professor in 1979). At the same time, he was named Director of Neurology at Goldwater Hospital, a hospital for the chronically ill.

MOSCOW

In February 1976, Jason was invited to Cairo for two weeks, to participate in a conference on rehabilitation and aphasia. Here he was to meet a number of persons who later played important roles in his career, such as Anton Kreindler, Anton Leischner, Macdonald Critchley, and Eberhard Bay; many of these acquaintances resulted in long-standing and significant cooperation. For example, Jason worked in the aphasia laboratory of Prof. Anton Leischner in Bonn, Germany.

Several long conversations with Prof. Bay also proved to be particularly important, focusing Jason's attention on largely forgotten early case studies in aphasia. Returning to the classics of early 20th-century neuropsychology with a fresh perspective has been a significant strand in Jason's career. As Jason put it in the Preface to his 1988 edition of selected papers by Liepmann, Lange, and Pötzl,

> Those unaware of history are, as we know, destined to repeat it, but in science this is not always a bad thing. Science is the application of changing methods to recurrent problems, and the repetition of a past that may even be unconscious has formed the basis for many a modest career. On the other hand, those who are aware of history can use their knowledge as a starting point for a deeper understanding. The uses and avoidances of the past are good reasons to pay attention to it, but there is for me another, better reason, and that is, that it is only through a careful study of the past that one can be certain a science has been delivered into the present in all its richness and possibility.

One of the important figures in neuropsychology not present in Cairo was Alexander Romanovich Luria, who declined the invitation for reasons of health. The following May, however, Jason obtained a grant from the Fogarty Center at the National Institutes of Health, as part of the US/USSR Cultural Exchange Program, and spent a month each with Kreindler in Bucharest and with Luria in Moscow. While Luria was recovering from a heart attack at a convalescent hospital, Jason would accompany him on his daily walks. Luria spoke excellent English, and the two men formed a cordial friendship, which can be seen in this photograph (Fig. 5).

At the time Jason met him in Moscow, Luria was emphasizing the importance of further studies of the frontal lobes. Shortly before his death he was looking at story recall in cases of frontal tumor and vascular lesion. He was impressed by the fact that such patients showed derailments in recall, but eventually were able to retrieve the core events of the story and its meaning. The importance of these

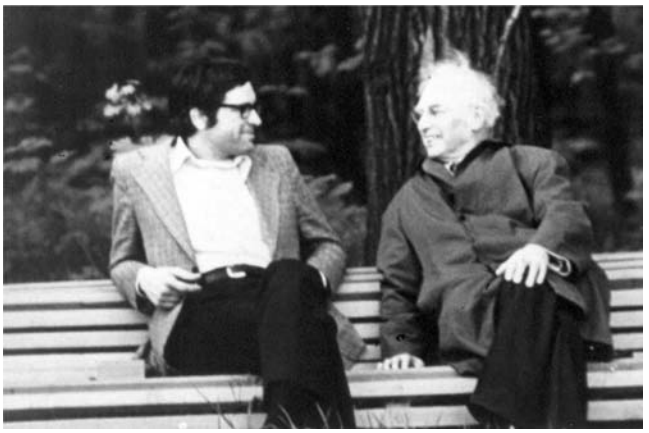

Fig. 5. Prof. Jason W. Brown (on the left) with Prof. Alexander Luria

cases pertains to inter-sentential connectedness in the generation of utterances from memory or, conversely, the effect of frontal lesions on memory and conceptual associations in recall. Other "frontal lobe" topics that were of interest to him at the time included the degree of generality or specificity in perseveration (motor, speech, writing, and so on) according to the laterality and depth of the brain lesion, and the application of electrophysiological measures of habituation to phonological and semantic stimuli in cases of adult brain damage and normal and retarded development (Pribram & Luria 1973).

Luria's main concern at the time of Jason's visit, however, was his autobiography, later edited by Michael and Sheila Cole (Luria 1979). In spite of the obvious tendency to gloss over political problems, this book is a valuable record of his professional life and his debt to Vygotsky, Anokhin, Bernshtein and other Soviet thinkers.

Luria did not leave behind a fully developed program of neuropsychological research to be implemented by his followers, but his ideas were so wide-ranging and powerful that they will continue to influence the field for years to come. In Jason's opinion, "The work on the frontal lobes was ingenious and innovative and, more importantly, was on the right track; the work on memory, aphasia and perception will not survive; and the functional system approach will follow the uncertain fate of componential theory."

Luria, like Jason himself, was critical of the quantitative neuropsychological test batteries that have dominated work in the field, and believed that psychometric methods should not replace a thorough bedside examination with emphasis on qualitative change. The nature of the symptom was of crucial importance. This insight was in turn an important inspiration for the development of the microgenetic theory of the symptom (Brown & Pachalska 2003).

The next year, 1977, brought the publication of Jason's second book, *Mind, Brain, and Consciousness.* This book attempted to perform two major tasks, the first of which was to begin showing how linguistic processes can be associated

with brain structure without following Geschwind's path back to the Wernicke-Lichtheim model. The challenge for any non-locationalist theory of brain function is of course the inescapable fact that there are some clear relations between the nature of the symptoms that occur after brain damage and the location of the lesion that seems to be causing them. The essentially holistic approaches of such eminent figures as Hughlings Jackson, Kurt Goldstein, and Alexander Luria are often criticized in neuropsychological literature for a certain lack of consistency, in that having subjected locationalist theories to a thorough critique, these authors then present clinical material demonstrating the precise symptoms associated with lesions in particular areas. The criticism is valid insofar as none of these authors actually produced a convincing alternative explanation for lesion effects, but not valid, as Jason Brown has many times demonstrated, in concluding that the locationalist explanation must be accepted, *faute d'un mieux*. In *Mind, Brain, and Consciousness* Jason argued that there is another and better way of explaining the relation between brain anatomy and brain function, based on the process model. A given place in the brain represents a given moment in the bottom-up flow of mental process, not a processor performing a discrete function[1].

The second important function of *Mind, Brain, and Consciousness* was to propose an agenda for the further development of microgenetic theory. Thus by design this book asks many more questions than it answers. At the same time, and for the same reason, it is perhaps the best available "beginner's introduction" to microgenetic theory. In Jason's own view, it is his most readable book, though it should be borne in mind that on the subject of clarity he is fond of quoting Kant: "There is no art in being intelligible if one renounces all thoroughness of insight." *Mind, Brain, and Consciousness* is a kind of manifesto for a revolution in neuropsychology that has in fact scarcely begun (Pachalska 2002).

Though it is gratifying to note that process-oriented approaches are gradually coming into the mainstream of neuropsychology, and the edifice of locationalist-connectionist theory is obviously cracking, still, a decent regard for the proprieties of science should be sending more readers back to *Mind, Brain, and Consciousness.*

ROCKEFELLER UNIVERSITY

In the academic year 1978-79, at the invitation of one of the founding fathers of cognitive psychology, George Miller, Jason was named Visiting Associate Professor at Rockefeller University, a position funded by a grant Jason received from the National Institutes of Health. At this time, the Sloan Foundation was proposing to develop programs in cognitive psychology. The University sponsored numerous conferences and seminars during this period, in which Jason took an active part. Among the participants who figured importantly in the development of this field were Johnson-Laird and Michael Gazzaniga, Jason has re-

[1] A thorough discussion of the neurophysiological bases of microgenesis and arguments against cognitivism can be found in Bachmann (2000; 2006). Additional papers on physiology and anatomy are in Pachalska and Weber, 2008.

counted this period as one of great ferment and interest in his career, though he was not seduced by modularity and componential theory. Indeed, he says that he has "battle scars" from the many seminars during that period in which he argued for an alternative way of thinking. The effort to make psychology a science involved not only the relegation of historical work to the status of descriptive anecdote, but substituted quantitative methodologies for the qualitative, error-based accounts of traditional neuropsychology. Further, the attempt at the time was to go from experimental cognition directly to neuroscience, bypassing neuropsychology or using it as a testing ground for family quarrels within the cognitivist paradigm.

Near the end of the year, the Psychology Department at Rockefeller was closed and George Miller left for Princeton, where he directed the McDonnell Foundation for Cognitive Science. This is not to say that the rise of cognitivism, in bringing to full flower a more virulent and widespread form of localization, was exclusively a negative influence on the development of microgenetic theory; but despite Jason's great respect for George Miller, microgenetic theory is as opposed to cognitivism as to connectionism. Indeed, a close look at the work of the early cognitivists, beginning with Chomsky's famous attack on Skinner in the early 1960s, shows that cognitivism, transformational grammar (as well as its more recent transfigurations), Fodorian modularity, and Geschwind's neuroanatomical theories are all parts of the same movement, emerging from the Zeitgeist of the 1970s and 80s. In Jason's view, modularity merely replaced the big black box of behaviorism with the little boxes and arrows of cognitivism. Moreover, the notions of input and output, central processors, buffers and so on, have nothing to do with the neurological or psychological reality of normal or pathological function. Jason's dissent from this approach, which he himself compares to "a child throwing a rock at an advancing tank," caused him to feel increasingly isolated in the academic environment in which he had been moving. Nevertheless, he persevered, encouraged and supported by friends such as Karl Pribram (Fig.6), Marcel Kinsbourne, and Paul MacLean.

Fig. 6. Prof. Jason W. Brown (on the left) with Prof. Karl Pribram

BELLEVUE

In 1984, Jason left his position as Director of Neurology at Goldwater Hospital and started a neuropsychology laboratory at New York's famous Bellevue Hospital, which had been home to such great figures in neuropsychology as Morris Bender, Lukas Teuber, Paul Schilder, and David Wechsler. At the height of his work at Bellevue, Jason supervised a staff of six post-doctoral fellows and a number of graduate students. In a European university, this would have been a suitable empire for a Great Professor, surrounded by assistants eager and willing to do whatever work he assigned them in return for the privilege of basking in the glory of the Great Man. In the more egalitarian atmosphere of the US, however, this was scarcely possible. Thus Jason quickly found that his responsibilities for his "flock" were hindering rather than supporting his own work, keeping him continually busy without contributing to the development of his theory. He writes:

> The activity in the lab was at the same time stimulating and a source of chronic discontent. The post-docs brought with them the interests and habits of graduate training; they were well versed in the topics of their dissertation but oblivious to the wider scope of neuropsychology, not only the case material and the problems I thought were important, but even the research of their co-workers, acting like selfish children who ignore each other's efforts and compete for a parent's attention. The experiments in the lab were often ingenious, but of parochial interest, in that they were designed to test, more accurately, to support, models that were for the most part derived from studies in experimental cognition in normal subjects.

MICROGENETIC THEORY

In *The Life of the Mind* (1988), Jason makes the claim that microgenetic theory is the first and (at that time) only viable theory of how the brain works that could serve as an alternative to the models advanced by Wernicke and his followers at the turn of the 20th century, as reformed and restored by Geschwind and others in the 1960s. In the more than 20 years that have gone by since this book appeared, that claim remains valid. What is more, the more recent work has shown that microgenetic theory is more than merely a particular brain model: it is a paradigm that has enormous implications for other fields of study as well as the neurosciences. If the mind can be conceived as those segments of mental process which devolve from the brain through a microgenetic process, we can conceive of a mind/spirit that is intimately related to the organic brain without either being simply reduced to brain function or divorced from the organic brain as a non-material essence.

The essence of microgenetic theory can be expressed in a single sentence:

> The mental state is a recurring process of flow from the archaic to the recent in forebrain evolution that retraces, in a fraction of a second (microgenesis),

formations in the evolution of the human brain (phylogenesis) and patterns in the growth of the individual (ontogenesis or morphogenesis).

This description carries with it a series of premises and implications that cut across the grain of much contemporary thinking about the brain. Microgenesis is first and foremost a bottom-up theory, i.e. it is assumed that no mental state originates or resides in the cortex but, rather, individuates from beneath. The cortex mediates the final phases of the process, articulating or analyzing that which is derived from antecedent phases. The salient aspect of the theory, as Jason developed it, is that it is rooted in biology, and yet leads by a series of logical steps to a concept of mind and consciousness[2] that is, in a profound and historically correct sense of the term, idealistic and subjectivist.

Although each of Jason's books is a complete and self-contained whole and represents a stage in the development of his thought, they all form a coherent series with few obvious signs of a change in direction. The earlier books contain the clinical material that forms the basis of the theory, while the later books are more speculative in nature, and extend the theory into philosophy of mind. Even so, the speculations are deeply rooted in the clinical material. The theory has been expounded and advanced from start to finish in a consistent manner. It is difficult to fully understand the recent work on value without reference to the earlier work on aphasia and process psychology.

Microgenesis is based on the following principles:

- An act of cognition is derived through distinct, qualitatively differentiated phases.
- The final phase of the process is not the output of a production line but incorporates all of the preceding phases.
- The derivation of the mind/brain state is a series of whole/part or context/item transformations. Inner and outer objects develop by the partition of antecedent wholes, not by assembly or construction.
- Each act of cognition elaborates a present moment of novel actuality within which life is played out. This moment is replicated in the next microgenetic sequence.

These principles are applicable to the cognitive and physiological transformations that co-occur in the actualization process. The early work involved the discovery of patterns of mental process that could be mapped to phylogenetic stages. The relation to ontogeny was problematic, since the brain matures as a whole, and studies of the regression concept in neuropsychology did not support a simple retracing of the acquisitional sequence. Thus, the ontogenetic part of the theory came later, as Jason realized that the morphogenetic concepts of parcellation and neoteny that related to the fetal and juvenile mind/brain could be linked to micro- and phylo-genesis.

[2] There are unusual cases of traumatic brain injury (Pachalska, et al, 2011) when an adult claims he is a child or a stranger yet the person is still conscious. Whether the quality of consciousness changes according to the nature of the altered self is uncertain.

Some implications of this idea are:

- The transition from core to surface is one from phases that are unconscious to conscious contents, from self to world, from past to present, from memory to perception (or from phases that appear memorial to those that appear perceptual). There is a continuous sheet of mind from the onset of the state in the archaic core to its termination as the world surface.
- The appearance of novel abilities, such as language, does not represent a terminal addition to the existing repertoire of behavior, but rather a branching from earlier penultimate stages.
- The state deposits in a fraction of a second and is replicated. The sequence is from potential to actual, not from cause to effect. This means that the causal interaction of objects in the world is, from the standpoint of the observer, an iterated sequence of inert actualities, i.e. objects that perish and are replaced by the ensuing sequence.
- In the sculpting of potential at each successive phase, the object-development is a microcosm of the evolutionary struggle in which the environment eliminates unfit exemplars. Sensation plays the role in perception that the environment plays in adaptation.
- On this account, change occurs in the transition from potential to actual, not from one actuality to another.
- The perception is wholly endogenous. It is shaped by constraints, both intrinsic (e.g. habit) and extrinsic (sensation). Sense data do not enter a perception; they are not combined to form objects. Rather, sensation is external to perception, acting to delimit, sculpt or parse the object-development so as to model the physical world.
- The result is that consciousness is trapped in the bubble of the mental state, leaving us to infer properties of physical nature that are ultimately unknowable by direct experience. The world revealed to the mind by perception is a negative image of the real world.
- The mental state arises in drive expression, which combines intensity of feeling with conceptual primitives, as in hunger. This state, in which a percept carries with it a stereotyped reaction, develops into conceptual feelings, then to affect-ideas. Thus concept ("what is this? what is going on here?") and feeling ("so what? what difference does this make to me?") are bound together in every cognition[3].

The microgenetic approach to brain/mind, based on process, evolution, and change, has broad implications for neuropsychology, psychology, psychiatry and the philosophy of mind, and indirectly for many other fields of scientific endeavor. At the same time, it runs counter to many currently prevailing views on the brain, the mind, and the troublesome relation between the two. For example, it is gen-

[3] A thorough discussion of the neurophysiological bases of microgenesis and arguments against cognitivism can be found in Bachmann (2000; 2006). Additional papers on physiology and anatomy are in Pachalska and Weber, 2008.

erally assumed that structure precedes function: that is, a structure appears in the brain and then assumes a function designated to it. In the microgenetic approach, structure and function are more closely related, in that function appears as the expression of structure in the fourth dimension. Specialized brain structures are not created according to a blueprint in order to perform a necessary stage in the production process, but rather consolidate, as replicated acts deposit a structure over innumerable repetitions. Perception and action are not serial functions, where perception is a construction of input and action is the discharge in output. Rather, perception and action, and/or the posterior and anterior systems of microgenesis, are initially inseparable, but they diverge as the process develops "up and out." The symptom is not simply an omission or deficit, or the appearance of an anomaly, but rather the surfacing of a fragment of behavior that is ordinarily hidden or transformed under subsequent microgenetic phases. Symptoms reveal, rather than obscure, the foundations of normal behavior.

In a later book, *Time, Will and Mental Process* (1996), Jason extended the theory to problems in process philosophy and theory of mind. The present moment, the relation of past to present and their relation to change, and the importance of genetic accounts such as gestalt psychology, comparative (Heinz Werner) psychology and percept-genetic (Gudmund Smith) approaches to process philosophy, were discussed at length, as well as in later papers. In addition, the book takes up such problems as the nature of the self, free will, agent and object causation, causal persistence and creativity. In later works on process theory, and as an introduction to the book *The Authentic Life*, Jason explored the ancient debate over being and becoming. His approach was that the process within a forming object (idea, etc.) constitutes the becoming of the object, while the object that is formed is the being. The conflict between process and substance is resolved in the notion of being as a momentary category of process, and process as the activity that creates categories of being. This led to the idea of energy in inorganic matter developing to feeling in primitive entities, and evolving slowly to feeling in progressively higher organisms. There is a continuity from energy to primitive feeling to drive, and in humans, from drive to desire and value.

In many of the later works, esp. *Mind and Nature* (2000), and *Process and the Authentic Life: Toward a Psychology of Value* (2005) Brown enters into a specific dialogue with the legacy of Sigmund Freud, whom he treats with considerable more understanding and respect than do the vast majority of neuropsychologists.

The Freudian unconscious is transformed in microgenetic theory from the vast, uncharted and impenetrable jungle of the Id into the phases of microgenesis that individuate from below (literally as well as figuratively) into consciousness. Drives arise in the midbrain and hypothalamus, developing into conceptual feelings by way of limbic system, with further analysis in neocortex. Freudian repression points to a failure of individuation of certain contents in the potential of memory. The mass of neural firings generated by the sense organs is successively constrained into:

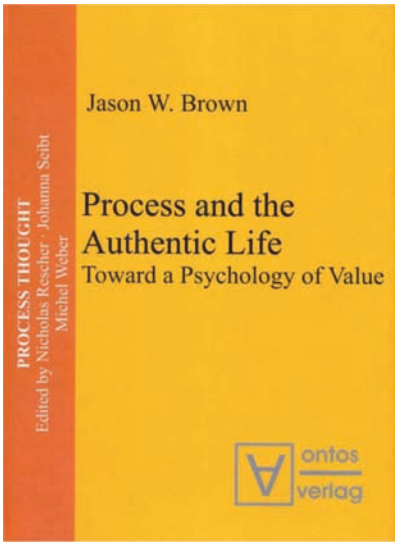

Fig. 7. The cover of Jason Brown's book, Process and the Authentic Life

- Gestalt-like objects and stereotyped, automatic reactions at the level of the brainstem and diencephalon;
- affects and impulses in relation to conceptual primitives (conceptual feelings) at the level of the limbic system, as in dreams;
- percepts, cognitions, and actions realized through the neocortex.

Drive energy does not cathect or activate an idea. This mistaken notion creates an artificial problem: how does the affect find the idea, or the reverse? Instead, drive and concept are part of the same construct at every phase, individuating to successively more refined derivations. The feeling that accompanies the object-formation goes out with the object into the world, investing the object with value (interest, worth). Psychoanalytic theories of consciousness in Freud's work were shown to be inconsistent with microgenetic accounts.

Jason's most recent work has involved pursuing the implications of this theory into areas that at first glance are rather remote from the neurological clinic where he began his work. Ethics and aesthetics constitute fields of inquiry that have not been of much interest in the neurosciences, though the mere fact that changes in both these areas are known to occur as a consequence of brain damage should have long since served to draw attention to these problems. Yet the reluctance of scientists to enter the territory of value judgments and personal preferences has lead to the formation of great gaps in our knowledge. In microgenetic theory, both moral and aesthetic judgments (what is good and what is beautiful respectively) must be understood in the same terms as all other mental processes, i.e. microgenetically. As objects and behaviors are successively constrained over phases in microgenesis, so the moral and aesthetic values take shape in stages. It is not the case, then, that moral and aesthetic decisions result from learned criteria imposed or imparted by the society, or from limbic affect

disguised as taste, but rather that perception, cognition, action and valuation evolve together on unitary and parallel but diverging paths (cf. Pachalska 2008).

In one of his recent papers (2012), entitled "What is consciousness," Jason summarizes the main features of the microgenetic account of consciousness, of the transition from self to image, act and object, the epochal nature of this transition and its relation to introspection, imagination and agency. The affinities of microgenetic theory to many aspects of process thought should be evident to readers of this journal, but the theory, which was developed in pathological case study, rests on a wealth of clinical detail that is beyond the scope of this article. In brief, the micro-temporal transition from archaic to recent formations (distributed systems) in the phyletic history of the forebrain constitutes the absolute mental state, with consciousness the relation of self to image and/or object. The discussion touches on the overlap of states, the continuity of the core over successive states, and subjective time experience.

Unity is an important aspect not only of consciousness but of the continuity that is the life experience. Each mental state has an insular character with an arising, perishing and replacement with no felt gaps within or across states. The self is felt as constant and continuous in spite of changes in thought, mood or feeling, or in growth over time. The existence of a self has been questioned from the Anatman theory of Buddhism[4] to the writings of David Hume, but the idea of cravings without a craver, as Danto put it, has never been fully resolved. Hume deferred an account of self-identity to future generations. James (1890) approached the problem in the idea of overlapping "pulses" of consciousness. The topic is extremely complex (Brown, 2010; 2010a) but a brief discussion is appropriate to resolve the dominant paradigm of modularity with the experiential unity of consciousness.

What would be the consequence if the mental state is an epochal whole and phases do not exist until the state terminates? The replacement of epochs is seamless, and each epoch has the character of an iterated point. Fig. 8 shows the overlap of states, with each state leading from self to world, from past to present, or from experiential memory to immediate perception. It will be seen that early phases (the core) of the state at T-1 are replaced by an overlapping state at T-2, though T-1 has not yet achieved existence. The core of T-1 is overlapped by T-2 before T-1 terminates, that is, before the epoch is established (see Fig 8).

This most recent phase in Jason's work, has impact on neurology and the philosophy of mind. It also impresses neuropsychologists. One can state that it is clearly the most dangerous, and at once the most creative theory, as Brown transgresses boundaries and canons, forcing into dialogue those who ordinarily do not speak to each other. The neuroscientists who read these books may often be baffled or even annoyed by the scholarly apparatus, the absence of statistics and the high level of abstraction, while philosophers with little knowledge of brain

[1] The concept of momentariness in Buddhist theory and the problem of discontinuity in successive causal pairs contrasts with the Jamesian and microgenetic idea of overlap of mental states (Brown, 1999).

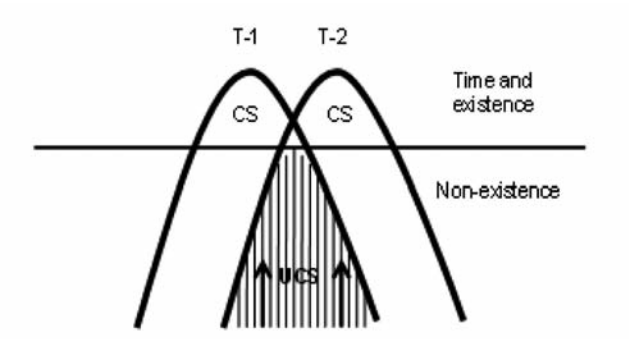

Fig. 8. The mind/brain state at T-1 is replaced by an overlapping state at T-2. The core of T-1 is overlapped at T-2 before T-1 terminates, i.e. before the epoch exists. This explains the recurrence of early phases in T-1 associated with individuality, self, character, dispositions, long-term and experiential memory, and the "persistence" of core beliefs, values and personality. Later phases perish on completion of the entire state to make way for novel perceptions. The re-activation of earlier phases by the overlapping state explains the sustained personhood behind succession. Early phases are ingredient across states; later ones are malleable to a greater extent as endogenous process is shaped by sensation (Brown, 2010a; see also Pachalska et al 2012)

anatomy or pathology may be no less confused. For those willing to risk the journey, however, the profit from the investment is more than worth the risk.

Two years ago (2010) Jason published his book entitled *The Neuropsychological Foundations of Conscious Experience*. This book takes clinical neuropsychology into the process theory of mind, and introduces the reader to the microgenetic concept of perception, time, serial order, subjectivity, conscious and unconscious thought, mysticism and creativity (see: Pachalska et al., 2012).

One year ago, Jason published *The Gourmet's Guide to the Mind*, published by a Belgian publisher, Chromatika. As one reviewer remarked,

> Not since William James has a neuropsychologist so consistently cultivated the poet's mastery of language to trace the periphery of the ineffable. Brown is brutally honest, whether exposing personal illusions or those shared with the world. This is a delightful book of koans that lingers in the mind like an exit sign in Plato's Cave (Jonathan Bricklin, Program Director, New York Open Center).

The most recent book by Jason Brown, printed in 2012, is entitled *Love and Other Emotions: The Process of Feeling*. It is an extended essay on the theory of feeling, emotion and value. The book begins with a chapter on falling in love, and goes on to discuss a variety of kindred emotions and related feelings, including hate, envy, compassion, separation, loss and grief, psychoanalytic concepts and philosophical studies. There is, of course, an enormous amount of literature on this topic, from poetry to neuroscience, but the book attempts to answer the following questions from the standpoint of a single underlying theory:

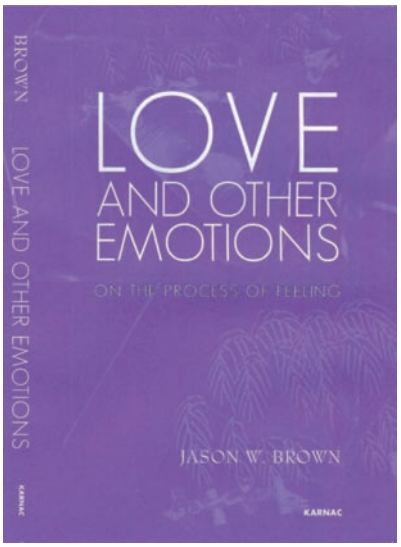

Fig. 9. The cover of Jason Brown's most recent book, Love and Other Emotions: On The Process of Feeling

(1) What is the nature of feeling?
(2) What is the relation of feeling to ideas?
(3) Do ideas generate feelings, and/or do feelings generate ideas, and if so, how?
(4) Or, are feelings and ideas - emotion and concept - part of the same complex?
(5) How do raw feelings relate to complex emotions?
(6) How do differences in the intensity of an emotion translate to qualitative change, or the relation of quantity to quality?
(7) What is the relation of inner feeling to outer display, or the relation of feeling to its "embodiment"?
(8) What is the relation of instinctual drive to desire and the partial or "cognitive" affects? How do hunger and sexual drive relate to desire and affect-ideas?
(9) What role do judgment and reason play in emotion?
(10) Is intentionality distinct from feeling or an expression of feeling?
(11) Do non-intentional moods develop into intentional feelings, or the reverse? If so, how does this occur?
(12) What is the relation of the emotions, or a theory of emotion, to brain processes?

In his review Dr. Mark Solms, neuropsychologist and neuropsychoanalyst, wrote that Jason Brown is a philosopher scientist in the tradition of Goethe. His profound reflections in this book on the topic of love and other emotions, like so many of his best works on the life of the mind, somehow float timelessly above the fray of contemporary science — despite their deep roots in evolutionary biology and behavioral neurology. It is impossible to understand his microgenetic theory of emotion without rethinking some of one's most basic assumptions.

Professor Talis Bachmann (University of Tartu, Estonia) wrote in his review that "Jason Brown's text is deeply academic (touching the phenomenological side of academism), it is founded on good brain science (that of the nomothetical genre), rooted in apt neurological art (that of the idiographical genre), and – last but not least – the book reads as a gripping personal essay."

Dr Stephen E. Levick, (Assistant Clinical Professor of Psychiatry, University of Pennsylvania School of Medicine) said in his review that

> Jason Brown does for emotion what he has already done brilliantly for thought and language, imagery and perception. Microgenetic theory, his unique unifying account of mind/brain process, is particularly well-suited to elucidate the edges of ineffability. In *Love and Other Emotions*, Brown applies the theory to those realms where words and conscious thought so often fail us. Only poetry can bring us as close. With mature erudition, wisdom, and compelling logic, Brown shares his profound insights into what must surely be the most mysterious dimension of mind/ brain function and human experience. Savour and reflect.

Jonathan Bricklin, author of *Sciousness*, points out that

> The dialectic between the knowing subject and the known object – played out broadly as East vs. West – is once again mined by its principal contemporary contributor in this compelling ontology of love. A brilliant psychologist/philosopher in the tradition of William James, Brown elaborates his foundational perspective ("The object of love is in the world, but love begins in the imagination") with seminal distinctions ("feeling is not something an organism has, it is what an organism is") and koan-like questions ("Is pain in a dream real pain?"), as he painstakingly navigates a safe passage through the Scylla and Charybdis of love: sentimentality and cynicism.

Finally, Jason's work has inspired many, and has enormous implications for other fields of study as well as the neurosciences. For example, Prof. Juri Kropotov, Director of the Laboratory for the Neurobiology of Action Programming at Institute of the Human Brain of the Russian Academy of Sciences, St. Petersburg, Russia, and Professor in the Institute of Psychology at Norwegian University of Science and Technology in Trondheim, Norway and his colleagues, has begun working according to microgenetic theory. Juri had his first acquaintance with microgenetic theory, in the late 1980s just before the collapse of the Soviet Union, when Talis Bachmann was visiting Juri's laboratory. In those days the lab was located at the Institute of Experimental Medicine of the Medical Academy of Sciences of the USSR. Tallis had recently come from the United States, where he had learned microgenetic theory from Jason. On the basis of the microgenetic approach, Talis developed a perceptual retouch theory (Bachmann, 1984), in which he suggested that specific sensory information processing is modulated

("retouched") by the activity of "non-specific" brain areas. Occupied by this idea, he came across studies by Prof. Kropotov on the reflection of cognitive functions in the basal ganglia thalamo-cortical networks. First, they carried out a pilot study on neurological patients (Parkinson's disease, phantom pain, epilepsy) and psychiatric patients (OCD), in whom electrodes were implanted for diagnostic and therapeutic purposes (Gogolitsin & Kropotov, 1983). The impulse activity of multiple neurons located near the electrodes in a psychological test in which visual stimuli (digits in a red LED matrix) were presented at or near threshold expositions. The digits were presented in pairs, so that at some interstimulus intervals the patients were not able to correctly identify the order in which they were presented. In the globus pallidus of the Parkinsonian patients Kropotov and Bachmann found neurons that were suppressed by stimulus presentation. If the two stimuli induced clear separated responses in the pallidal neurons, the patients were able to perform the task, but if the responses overlapped they had major difficulties. It would seem, then, that the neurons in the basal ganglia indeed retouched the sensory input. Unfortunately, shortly after this pilot study the Soviet Union collapsed. Estonia became an independent country, and the connection between the Institute of experimental medicine in St. Petersburg in Russia and Tartu University in Estonia was lost (Kropotov & Mueller 2012).

CLOSING THOUGHTS

Jason W. Brown has enjoyed very strong ties with neuroscientists in Poland. Among other things, he has been working as associate editor of *Acta Neuropsychologica*. We are very pleased and honored that a man of this distinction and international stature has agreed to become associate editor.

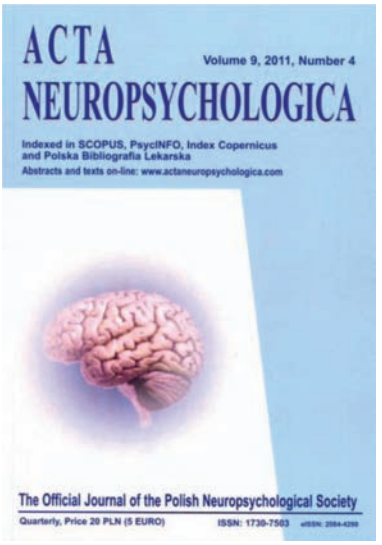

Fig. 10. Acta Neuropsychologica, The Official Journal of the Polish Neuropsychological Social

In 2005, during a memorial symposium held in Wroclaw, Poland, to commemorate the 100th anniversary of the death of Carl Wernicke and the 75th anniversary of the death of Alois Alzheimer (both men spent part of their careers in Wroclaw, then known as "Breslau"), Jason was awarded the Copernicus Prize 2005, the highest distinction conferred by the Polish Neuropsychological Society. This event marked in a particular way his important role in shaping the development of contemporary neuropsychology in Poland (his grandmother's homeland), where the lingering influence of Luria has created a climate more open to non-locationist, process thinking about the brain. He has since returned to Poland on many occasions, lecturing to ever larger and more enthusiastic audiences of Polish students and scientists.

The level of enthusiasm for his theory among the best and brightest of the next generation of neuropsychologists in Poland, and not only, gives grounds to hope that the scientific edifice Jason Brown has constructed will be, to borrow Horace's famous motto, monumentum aere perennius: "a monument more lasting than bronze."

This biography is, as I am more than happy to confess, manifestly incomplete. This results not only from the sheer amount of work that Jason has done over the years, with his boundless enthusiasm, energy, and determination, and the extraordinary range of his intellect, but also from the fact that his scientific career is happily far from over[5]. Further chapters in this biography will surely need to be written. It is my own fondest hope that on the occasion of Prof. Jason W. Brown's 80th birthday, I will be able to present him with the next chapter of this modest biographical effort.

Fig. 11. Prof. Jason W. Brown (on the left) with Prof. Maria Pachalska

[5] Further information about Jason's publications and program in NY can be found on his website, jwbrown.centerforcognition.org (with Polish translation) or http://en.wikipedia.org/wiki/Jason_Walter_Brown

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