

INTRODUCTION

WE have come to a new understanding of the life of the mind. The notion of the solitary thinker still appeals to those molded by the Western belief in individualism. However, a careful scrutiny of how knowledge is constructed and artistic forms are shaped reveals a different reality. Generative ideas emerge from joint thinking, from significant conversations, and from sustained, shared struggles to achieve new insights by partners in thought.

In this book, I address intellectual and artistic collaboration - the interdependence of thinkers in the co-construction of knowledge¹ - among partners and in small groups. This exploration is sustained by a growing community of scholars who view learning and thinking as social processes. This large “thought community” of interactive scholars committed to transformation has a diverse membership; it includes social scientists, philosophers, literary critics, educators, organization theorists, and media specialists. We share a recognition that in our changing world, traditional concepts are overturned at an increasing rate, habitual modes of work are transformed, and new organizational forms are established in offices and factories. These changes are usually painful for the participants, who often cannot make these adjustments by themselves. We live in a period of “necessary interdependence,” wrote educator Kenneth Bruffee.² It is through joint activities and partnerships that we confront our shifting realities and search for new solutions. This historical and technological context promotes collaboration in science, artistic endeavors, universities, ‘Industrial settings, and schools.

The examples of partnerships in this book are drawn primarily from the joint activities of creative individuals. These are people who have chosen to pursue discovery and the co-construction of new knowledge within specific domains such as art, physics, psychology, or music. They face many hardships and reap many joyous rewards, Their lives reveal some interesting *dynamics of mutuality, which are not restricted to artists and scientists, but are relevant to people in every walk of life.* In collaborative work we learn from each other by teaching what we know; we engage in mutual appropriation. Solo practices are insufficient to meet the challenges and the new complexities of

classrooms, parenting, and the changing workplace. These widespread developments have resulted in a large, growing body of research literature.’ There is a shared interest in collaborative dynamics among Interdisciplinary scholars who study large and small groups. My own focus is on creative partnerships, many which last a decade or more, as opposed to the shorter duration of cooperative teams. My choice of smaller groups and dyads is motivated by the desire to understand the psychological nature of collaborations. Creative collaborators provide important insights for ways to build joint projects, and their practices challenge mainstream theories focused on the individual.

Recently, powerful statements about interdependence have been made by members of diverse disciplines. The importance of cooperative work in film, musical performance, and the theater is clear to casual observers. Sociologist of art Howard Becker wrote that, even in painting and poetry, “the artist ... works in the center of a network of cooperating people whose work is essential to the final outcome.”⁴ Collaboration has been widely recognized in the sciences, from the founding of quantum mechanics by Bohr and Heisenberg to the joint discovery of DNA structure by Crick and Watson, to the work of an increasingly long list of researchers in the physical and biological sciences. Even among writers, the role of the individual creator is questioned. Tony Kushner, author of *Angels in America* and *Perestroika*, told of his artistic interdependence with his friends and partners: “The fiction that artistic labor happens in isolation, and that artistic accomplishment is exclusively the provenance of individual talents, is politically charged, and in my case at least repudiated by the facts.... Had I written these plays without the participation of my collaborators, they would be entirely different-would in fact never have come to be.”⁵

My book has three interrelated objectives: to develop theoretical approaches and models for collaboration; to identify collaborative dynamics that contribute to or undermine long-term success; and to document how experienced thinkers engage in joint efforts as they struggle against society’s pull toward individual achievement.

Artistic partnerships are richly documented by humanities scholars Whitney Chadwick and Isabelle de Courtivron. In their edited volume of case studies, *Significant Others: Creativity and Intimate Partnerships*, they explored the myths and realities encountered in shared lives.⁶ In this engrossing book of artistic collaborations between couples, they provided a dialogic view of creativity. The contributors to this volume examined “the real social and material conditions which enable, or inhibit, the creative life”⁷ while relying upon the analytical tools of art history and criticism.

Documenting increasing prevalence and acceptance of collaboration between spouses in the sciences, Pycior, Slack and Abir-Am wrote, in their introduction to *Creative Couples in the Sciences*:

In explaining synergistic couples, many authors emphasize the complementarity - drawn along the lines of disciplinary commitment, socially constructed gender, personality, or scientific style - that seems to have permitted some couples to do scientific work that surpassed what either the husband or wife alone would have been able to accomplish or the wife alone would have been able to pursue.⁸

Like *Creative Couples in the Sciences*, my book also explores artistic and scientific partnerships. Unlike *Creative Couples in the Sciences*, my accounts of these collaborations are integrated with theoretical approaches drawn from cultural-historical and feminist theories.

I rely on L. S. Vygotsky's cultural-historical ideas that creative activities are social, that thinking is not confined to the individual brain/ mind, and that construction of knowledge is embedded in the cultural and historical milieu in which it arises. His work focused on the dynamic interdependence of social and individual processes, especially language in thought, that leads to co-construction of knowledge, tools, and artifacts.

Vygotsky realized that works of art, mathematical systems, maps, and drawings all contribute to representational activity, to the multiple ways in which self and other are built and connected. An individual learns, creates, and achieves mastery in and through his or her relationships with other individuals. Ideas, tools, and processes that emerge from joint activity are appropriated, or internalized, by the individual and become the basis of the individual's subsequent development.⁹ Vygotsky's contemporary, Russian literary critic Mikhail Bakhtin, elaborated on similar notions of experiencing the self through the eyes of the other: "I cannot do without the other; I cannot become myself without the other; I must find myself in the other, finding the other in me."¹⁰ Vygotsky, in his own work, thrived on such interdependence with his collaborators.

This book is part of the broader cultural-historical project in the human sciences. The participants in this project share assumptions about the roles of culture, context, and history in development throughout the lifespan. We stress the dynamic interdependence of social and individual processes as conceptualized by Vygotsky. His work is both applied to and expanded in this treatment of collaborative, creative partnerships.

Feminist theories further echo the idea of the interrelationship of self and other. They challenge our current cultural and professional

socialization in which the emphasis on individuation and autonomy prevails. They propose alternative relational/cultural theories that emphasize mutuality and interdependence. For example, I rely upon the voices of Carol Gilligan, Jean Baker Miller, the authors of *Women's Ways of Knowing*, and many other thinkers who have written about development as a process of growth and transformation within communities of care. Communities of care, with their ethic of responsibility, contrast with the individualistic, autonomous viewpoints, with their ethic of rights and impartiality, that are measured by most traditional psychological tests.¹¹ In addition, I draw on the perspective of “constructed knowing,” which emphasizes situated, contextual, and integrated modes of thinking over the more traditional and prevalent separate mode of knowing.

Such feminist relational theories can be linked to other approaches concerned with the social origins of personhood, such as those of philosophers Ludwig Wittgenstein, Karl Marx, and Michel Foucault. Their notion of “social selves” examines how identities are socially constructed and shaped by participation in the communities and cultures in which the individual lives.¹²

Both cultural-historical theory and feminist theory share the belief that it is important to go beyond the popular narratives of individualism when studying human activity. There are important philosophical affinities between these traditions, such as the social sources of development, the importance of culturally patterned practices and power relations, issues of language and self, and the mutually constituting roles of self and community.¹³ The contributions of scholars in these two theoretical thought communities, or groups of experienced thinkers who engage in intense interaction with each other while promoting a perspective shift in their disciplines, are critical to this study of collaboration.

By studying long-term collaborations in detail, this book weaves together theory and accounts of collaborative experience. Although my original interests focused on the intellectual dynamics of joint efforts, additional themes emerged as I interviewed dozens of working partners and members of small collaborative groups. As the stories unfolded, they revealed themes of connection, fusion, transformation, conflict, and separation, which animate joint connections. Collaboration thrives on diversity of perspectives and on constructive dialogues between individuals negotiating their differences while creating their shared voice and vision. In addition, I identify cognitive and emotional dynamics of collaboration, which are more implied than explored in the existing literature on partnerships.

To investigate these issues, my colleague, Kathryn Miller, and I conducted focused interviews with experienced thinkers in the physical sciences, mathematics, philosophy, the social sciences, and the arts.

Following these interviews and an immersion in the growing literature on collaborative partnerships, we developed a “collaborative Q-sort.” This measure is composed of 50 statements which deal with motivation for collaboration, styles of work, collaborative environments, and complementarity of roles. Each participant was asked to **sort** these statements into a bell-shaped distribution, ranging from the item that is most characteristic to the item that is least characteristic of the person’s collaboration. During sorting, participants often shifted their cards until they were satisfied with the distribution. Some participants grouped their cards so they did not follow a strict bell curve. Others eliminated some cards as irrelevant to their experience. While we administered the sort, participants comments were tape recorded. Each member of a collaboration completed the Q-sort independently. Then they were brought together to discuss the similarities and differences of their approaches as revealed by the placement of the Q-sort items and by their commentaries. (See the appendix for a copy of the Q-sort instrument.)

The chapters in this book integrate information gathered from interviews, Q-sort commentaries, and biographical information.

One of my central claims is that *the construction of a new mode of thought relies on and thrives with collaboration*. When scientists or artists reexamine old theories that conflict with new discoveries, insights, and perspectives, they find thinking together particularly productive. Complementarity is one of the driving forces of creative partnerships.

I start with narratives of joined lives and shared work in Chapter 1. When combining family life and creative work, couples face the challenge of overcoming traditional gender roles. Establishing equality between partners who are successful in meeting this challenge is a demanding process. In charting their trajectory, I introduce some of the collaborative dynamics central to this work.

In Chapter 2, I focus on scientists- their disciplinary, stylistic, and temperamental differences, and their productive interdependence. There are interesting modality differences among collaborating thinkers - visual, kinesthetic, or verbal - which are often expressed in scientific partnerships. Complementarity provides for the diversity and growth of science, but it can also provoke intense dialogues and principled disagreements, which can, at times, be daunting. Through the partners’ unity of purpose, joint efforts prevail. I explore supportive as well as

oppositional complementarity, connections that contribute to addressing and resolving paradoxes in facts and theories.

Chapter 3 focuses on artists. The partnerships of two painters, Picasso and Braque, and a composer-choreographer team, Stravinsky and Balanchine, are well documented. Their collaborations highlight the power of jointly constructed creative syntheses. At the height of a transformative partnership, as in the case of the originators of Cubism, individual identities and vanities are banished. The resulting work leads to the transformation of both the domain and the participants. Artists often face loneliness, poverty, and doubts about their ability, particularly in the early stages of their careers. Creative work requires a trust in oneself that is virtually impossible to sustain alone. Support is critical, as the very acts of imaginative daring contribute to self-doubt. Mentors, family members, friends, lovers, working partners, all may contribute to the forming of a resilient self. The “literate passion” of Anaïs Nin and Henry Miller, disclosed in their letters to each other, evokes the sustaining possibilities of artistic interdependence. Their relationship also illustrates the complex demands of intense connections. For this couple, as for many collaborators, their letters show that their changing rhythms of interaction - shifts between periods of interdependence and independence - were critical to their survival.

The impact of gender on collaboration is the topic I address in Chapter 4. Do men and women feel differently about the ownership of their ideas? How does the concept of “we” emerge in creative work? Feminist theories of relational dynamics and ways of knowing offer insight into the study of joined lives and shared work. I rely on the metaphor of “a chorus of voices which was to sing the story we wanted to tell; there were to be no solos.”¹⁴ This is how the authors of *Women’s Ways of Knowing* characterized their construction of a joint authorship. Both the interest in and the practice of collaboration reflect changing cultural-historical realities. Some of the broader implications of these realities are discussed.

In Chapter 5, I discuss how patterns of collaboration vary in their cognitive and emotional dynamics. The norm for complementary partnerships is a caring, respectful relationship. In other collaboratives governed by a powerful transformative vision, emotional relationships are more intense. The title of the chapter, “Felt Knowledge,” is borrowed from playwright Arthur Miller. It highlights the unity of thought and motive. Some of the motivational sources for collaboration include shared, passionate engagement with knowledge in dyads and groups devoted to groundbreaking endeavors. Emotional scaffolding creates a safety zone in which support and criticism are practiced. It also contributes to human plasticity, an opportunity for growth through

mutual appropriation of complementary skills, attitudes, working methods, and beliefs. But lives in which work and love are intertwined require great sensitivity. In the marriage of Sylvia Plath and Ted Hughes, for example, their emotional interdependence became excessive, and the marriage ended in tragedy. In other cases, the struggles for equality, intimacy, and mutual support are smoothly negotiated.

In Chapter 6, I discuss mentoring with a special focus on the social sciences. Experienced thinkers value the commitment, talent, and curiosity of their younger partners, while the mentors, in turn, are renewed and rewarded in the process. At its best, collaboration across generations is a process of mutual appropriation rather than a simple transmission of knowledge. It can be a shared flight into the future.

In Chapter 7, I bring together theoretical concepts embedded in the many collaborative narratives presented in this book, including both cognitive and affective dynamics. I claim that partnered endeavors contribute to stretching the self while bringing changes to ‘the domain in which the collaborators work. The extent to which collaboration results in transformative contributions depends on many factors: the shared vision and purpose of the partners, their talent and perseverance, and their timing. The confluence of diverse fields of endeavor can bring to the fore contributions that were neglected at the time of their production. As Vygotsky and biologist Ludwik Fleck proposed: historical and social forces contribute to the relevance or invisibility of newly forged ideas. In this book, historical, cultural, and institutional conditions, which shape the nature and meaning of collaboration, are not treated in depth. While I affirm their critical roles, I rely on the growing and rich literature authored by my colleagues to complement these studies of intimate and small-group collaborations.

In every phase of this work, my partners in thought and deed have helped to realize a durable “we”-ness, built on a shared vision, patience and time, careful planning, and a chance to be playful as well as critical with each other. I can but echo the words of playwright Tony Kushner: “Had I written this book without the participation of my collaborators and my family, it would be entirely different. In fact, it would have never come to be.”

Final Section

PATTERNS OF COLLABORATION

Thought communities are different from cooperating teams as their members take emotional and intellectual risks to construct mutuality and productive interdependence. Their objectives are to develop a shared vision as well as achieve jointly negotiated outcomes. These collaborating groups vary in intensity, duration, interactional processes, and objectives. Through analysis of focused interviews, study of biographical data, administration of a collaborative Q-sort, and reconstruction of partnerships through joint narrative accounts, my collaborators and I identified four patterns of partnerships.

We see collaborative endeavors as dynamic, changing processes. In the diagram we use a circle with gradations to show possible movement among patterns. This classification is not a hierarchy. Collaboration often starts as one pattern and over time changes into another pattern. The first of these patterns we refer to as *distributed collaboration*. Psychologist Herbert A. Simon described this mode of working in his autobiography:

To make interesting scientific discoveries, you should acquire as many good friends as possible, who are as energetic, intelligent, and knowledgeable as they can be. Form partnerships with them whenever you can. Then sit back and relax. You will find that all the programs you need are stored in your friends, and will execute productively and creatively as long as you don't interfere too much. The work I have done with more than eighty, collaborators will testify to the power of that heuristic."

Distributed collaboration is widespread. It takes place in casual settings and also in more organized contexts. These include conversations at conferences, in electronic discourse communities, and among artists who share a studio space. In these groups, participants exchange information and explore thoughts and opinions. Their roles are informal

and voluntary. In electronic discussion groups, for example, one person may assume a more active organizing role, while others may remain “lurkers.”

The participants in distributed collaborative groups are linked by similar interests. At times, their conversations may lead to new personal insights. When exchanges become heated or controversial, new groups may form to address issues in greater depth. Other groups splinter or dissolve. But out of such informal connections some lasting partnerships may be built.

The second pattern on the diagram is *complementarity collaboration*, the most widely practiced form. It is characterized by a division of labor based on complementary expertise, disciplinary knowledge, roles, and temperament. Participants negotiate their goals and strive for a common vision. One of the most effective metaphors that captures disciplinary complementarity and mutual understanding is Stravinsky’s “visual hearing” of his music. Another is offered by linguist George Lakoff describing his work with philosopher Mark Johnson: “We lived in each other’s minds.” The insights that collaborators provide for each other may pertain to their craft, to their respective domains, or to their self-knowledge as creators. This is particularly true when the collaboration involves complementarity in scientific fields or in art forms. Differences in modalities—the translation of one’s thoughts into a new language of expression or into the developed mode of expression of one’s partner—are part of this rewarding process.

I have frequently referred in this book to the personal and professional partnership of Pierre and Marie Curie. Besides their disciplinary complementarity (Marie’s background was in chemistry, Pierre’s in physics), they also played complementary roles. Marie was a “thinker-doer.” She took on a large part of the organizing work in their laboratory. Her husband provided some of the conceptual scaffolding of their research. They were complementary in temperament. He was retiring and cautious, reluctant to publish until completely satisfied with the accuracy of his findings. She was quick, determined, and willing to work with institutions, which required negotiation and compromise. This division of labor remained a flexible aspect of their collaboration.

Their partnership was fueled by their love for each other and their shared passion for their scientific work. Their values were remarkably similar, considering their different early upbringing. After Pierre’s untimely death, Marie continued their research. She had closely observed how Pierre worked and made some of his methods and modes of thought her own. This illustrates one of the most important psychological dynamics of collaboration, mutual appropriation, or the stretching of human possibilities through the collaborative partners’ shared experiences that sustains their endeavors. This stretching

provides personal benefits in addition to the accomplishment of jointly negotiated tasks. In applying the term “appropriation” to creative endeavors, we are stretching a concept first developed by Bakhtin, which Vygotskian scholar James Wertsch described as follows: the process is one of taking something that belongs to others and making it one’s own.” He used words as the example of appropriation when he quoted Bakhtin: “The word in language is half someone else’s. It becomes ‘one’s own’ only when the speaker populates it with his own intention, his own accent, when he appropriates the word, adapting it to his own semantic and expressive intention.”

In collaborative endeavors, mutual appropriation is a result of sustained engagement during which partners hear, Struggle with, and reach for each other’s thoughts and ideas. This is not only a cognitive process. It is a good example of both intellectual and emotional appropriation. In the preface to the second edition of *Women’s Ways of Knowing*, Nancy Goldberger recollected the rewriting of a draft chapter of their book: “My task is to rewrite, but first I must type the words from my colleague into my word processor. I decide to edit as I type.... [I] try to understand her intention behind her choice of words, try to place myself in her place so that I feel inside her mind and heart, search for her meaning before I impose new words.” This account tells of a cognitive task placed within the relational dynamics of this group. While the language of connectedness is more often employed by feminist writers, it is not limited to women. Cellist Yo Yo Ma’s collaboration with choreographers and others evoked the same unification of heart and mind about which Goldberger wrote.

Mutual appropriation, then, implies a very particular form of human interdependence that takes years to be fully realized. Motivational dynamics are linked with cognitive ones. Some may ask, is it sensible to separately identify these processes? Our answer is yes. Motivation and cognition constitute a complex system, and if some aspects of the system are not identified, the interrelationships among them are ignored.

In planning this book, motivational concerns emerged slowly for me. It was only while working on Chapter 4, the chapter which addresses gender and collaboration, that I realized I had not dealt with them explicitly. I attribute this delayed awareness to my socialization in Central European culture, which values knowledge and language very highly. Cultural-historical theory fits my interests, as it is most explicit about cognitive and linguistic issues. But once I started to interview some of the feminist psychologists, I was struck by the productive way in which they integrated epistemological and relational concerns. Their example was critical to my identifying motivational themes in the interviews and biographic materials I have collected.

Human interdependence is central to Vygotskian thought. There is agreement that survival of human infants requires mutuality and interpersonal synchrony. Born helpless, our young call forth caregiving behavior by adults and older siblings. As they mature, they start to participate in the vast pool of transmitted experiences of their caregivers. Vygotskian scholars have written about cultural variations in caregiving behavior (see Cole, 1996) and have stressed the social sources of cognitive development. Jill Tarule, one of the authors of *Women's Ways of Knowing*, identified commonalities in feminist and cultural-historical theories. She noted their shared emphasis on the role of language in maintaining and developing meaningful connections throughout the life span: "Vygotsky's emphasis, as in connected knowing, is on how thinking and knowledge are mediated through interaction with others. [Vygotsky's approach] values a dialogue that relies on relationships as one enters meaningful conversations that connect one's ideas with others." "An additional psychological dynamic of collaboration is empowerment, or what I refer to in Chapter 5 as "the gift of confidence." I quote Jean-Paul Sartre saying to Simone de Beauvoir, "You did me a great service. You gave me a confidence in myself that I shouldn't have had alone." This is echoed by most collaborators whose words are included in this book. They write and speak of leaning on their partners' confidence during periods of self-doubt and rejection. Mutual caretaking is one way this dynamic is described by Janet Surrey. It is crucial when partners present a new, possibly controversial idea. Blythe Clinchy recalled when writing the last sentence of *Women's Ways of Knowing*, how when she first typed it, she wrote: "These are the lessons we think we have learned listening to women's voices." After staring at the sentence, she deleted, "we think." She was able to make an unqualified assertion speaking in the voice of the foursome, rather than speaking for herself alone.

Another aspect of empowerment is revealed in some partners' willingness to face the pain of their own past. Carol Gilligan illustrates this idea in her description of a study of relational impasse among adolescent girls. With a group of Harvard women, she interviewed young girls in private and public schools. They identified ways in which young women feel under pressure "to hide what they most want and value ." The researchers realized that they, too, had experienced these feelings; through their collaboration they were able to confront their history. These joint discoveries made them stronger individually and deepened their connections.

A third pattern identified in our work is the family *collaboration*. We characterize it as a mode of interaction in which roles are flexible or may change over time. Such a shift is well documented by Will and Ariel Durant, co-authors of the multivolume *A Story of Civilization*.

Their joint autobiography is based on their letters to each other. It reconstructs the changes in their working and personal relationship. When they married, young Ariel worked on classifying her husband's notes for his books. He was more experienced and more highly educated than she. But with each new volume in the series, Ariel's contributions became more important. She started to do independent research and challenged some of her husband's interpretations of history. Their debates and dialogues were stimulating to both, and her role became significant in their work. Her change from helpmate to fully engaged partner was recognized by her husband in 1957, decades after they first married. He placed both of their names on the title page of *The Age of Reason*.

The Durant partnership during the second half of their marriage is an example of a dynamic integration of expertise. Participants help each other to shift roles, including the move from novice to a more expert level. As in a family, members can take over for each other while still using their complementarity. These groups or pairs tend to be committed to each other for a long time. Roles and responsibility ties may shift during their partnerships.

Psychologist Harold Stevenson's metaphor for collaboration came from a Chinese family: "You give up some of your freedom, in a sense. On the other hand, you expand your reach by such a great amount." The Group Theater described in Chapter 3 is an example of the extended family mode of collaboration. The members of this innovative group shared important dramatic and political objectives. One of the theater's founders, Lee Strasberg, was the American adapter of the famous Stanislavsky method. At the beginning, the directors were the primary decision makers for the theater. But as the group developed, the actors participated in the decisions and helped to fashion a more egalitarian structure.

The participants in the Group Theater periodically needed to integrate new members. This required readjustments and the socialization of newcomers into an existing structure. The process was akin to a family adapting to new relatives. While dealing with these challenges, the actors and directors became more aware of what connected them. They shared companionship and a sense of belonging: they aspired to some minimum job and financial security. And sometimes they had the unrealistic belief that their community was an oasis in a difficult world.

In *Organizing Genius*, Bennis and Biederman described a somewhat similar dynamic: "Great Groups become their own worlds... [They] create a culture of their own-with distinctive custom, dress, jokes, even a private language. People who have been in Great Groups never forget them, although most groups do not last very long. Our suspicion is that such collaborations have a certain half-life, that, if only because of their intensity, they cannot be sustained indefinitely."

Harold Clurman documented the decade-long history of the Group Theater in his book *The Fervent Years*. In the late thirties the group faced new financial crises and needed to reorganize once more. The actors took on even more decision-making responsibilities. For a few years their vision was supported by the broader society, and they had some successful seasons. But they had no enduring financial base. Eventually, the Group Theater disbanded.

Two interesting theoretical issues emerge from the history of the Group Theater. One of these is the role of conflict in collaboration. Finnish researcher Yrjo Engeström puts a great emphasis on “knots” in cooperative interactions, which allow for hidden contradictions to emerge and be confronted by participants. The actors and directors of the Group Theater found themselves in conflict a number of times. But they were willing to confront their differences and, through negotiations, to modify the structure of their organization.

Conflicts between collaborators are not always resolved. In some intense personal partnerships, for instance, in Martha Graham’s brief marriage to Erick Hawkins, they failed to resolve the tension between their cooperative and competitive drives. When Hawkins first joined Graham’s young company, he added a strong male idiom to a predominantly female group. He had a great impact on Graham’s choreography: her themes became more charged and emotional. But Graham’s extraordinary abilities overshadowed her husband’s. Her biographer, Agnes de Mille, wrote that Hawkins was unable to tolerate the disparity between them. He walked out of the company and the marriage.

The sustainability of a collaboration depends on the supporting structures in which it is embedded. While dyads can draw on their existing resources, larger ensembles such as the Group Theater depend on support from the field. This concept is advanced by Csikszentmihalyi in his analysis of creativity.’- The field consists of the institutions and individuals that select and support innovations within a domain. In the case of theater, this includes drama critics, foundations, and individual contributors. These, in turn, are affected by the larger socio-political atmosphere, or *Zeitgeist*, in which an art form is practiced. All these factors contribute to the development and the eventual decline of innovative institutions such as the Group Theater.

Csikszentmihalyi also described domains: “knowledge conveyed by symbols ... bundled up in discrete domains - geometry, music, religion, legal systems, and so on. Each domain is made up of its own symbolic elements, its own rules, and generally has ‘its own system of notation. In many ways, each domain describes an isolated little world in which a person can think and act with clarity and concentration.” Disciplinary and artistic socialization into domains require the appropriation of a dominant mode of thought and the acquisition of certain symbols. But

these are not permanent. As Ludwik Fleck argued, great changes of thought styles require changes within communities of experienced thinkers. These transformative changes may be stimulated by periods of social unrest or by creative individuals standing at the intersection of different communities of thought.

I argue, in a similar vein, that *transformative changes require joint efforts*. The weight of disciplinary and artistic socialization is hard to overcome without assistance. One of the central claims in this work is that the construction of a new mode of thought or art form thrives best in *integrative collaboration*, the fourth pattern presented in the diagram above. These partnerships require a prolonged period of committed activity. They thrive on dialogue, risk taking, and a shared vision. In some cases, the participants construct a common set of beliefs, or ideology, which sustains them in periods of opposition or insecurity. Integrative partnerships are motivated by the desire to transform existing knowledge, thought styles, or artistic approaches into new visions.

The partnership of Picasso and Braque is an example of an integrated, transformative collaboration. Together they constructed Cubism, a new, twentieth century approach to painting that focused on the interrelation of objects. Art historian John Berger argued that the “Moment of Cubism” is one that coincided with profound changes in science, mass communication, and our view of reality. It also coincided with social unrest and far-reaching political changes.

Berger and Fleck sought to place the social processes of knowledge transformation into the broad contexts of history. Vygotsky had a similar commitment. His theory, construction was integrative; he worked closely with a number of collaborators. The authors of *Understanding Vygotsky*, van der Veer and Valsiner, wrote of his intellectual interdependency and the “web of other ideas” available to him. Vygotsky relied heavily on the ideas of French, German, English, and American psychology, using and transforming them. He constructed his research approaches and his theoretical ideas jointly with his Russian collaborators, including Luria, Leontiev, Levina, and Shif, among many others. Members of this group traveled together, establishing new psychological laboratories in different parts of the young Soviet Union. They talked and argued, they planned experiments, and they polished their ideas through sustained, intense interactions.

In this collaborative context, cultural-historical theory was born. And the scholars who rediscovered the Vygotskian school, and are expanding it today, also work collaboratively. Some of their interactions follow the distributed pattern, described above, as members of the computer network “xmca.” Others write, publish, or teach together. Theoretical issues are of particular interest to them, as are

ideas, interpretations, and the co-construction of new knowledge. As a thought community, these scholars have a complex thinking style. They are highly interactive, at times argumentative, and are sustained by a shared vision of historically and culturally constructed human possibilities.

DYNAMICS OF COLLABORATION

This book is devoted to constructing “we-ness” in a world where the separateness of individuals is still highly prized. At the same time, under the pressure of mounting challenges to existing knowledge, collaborative thought communities are growing in numbers and effectiveness. Participants in these thought communities experience a stretching of themselves, as they share the sustained labor of changing their domains. This insight, as well as others gained through this study of creative collaboration, is not limited to the arts and sciences. Collaborative dynamics are relevant to people in diverse walks of life.

The demanding task of building sustained collaborations is particularly worthwhile when we address large questions that cannot be resolved by solo efforts. But in engaging in collaboration in Western societies, partners need to shed some of their cultural heritage, such as the powerful belief in a separate, independent self and in the glory of individual achievement. These are deeply ingrained in us. When partners commit themselves to collaboration, they challenge these beliefs. The very effort to work together, to risk an undertaking that is so different from the norm, is a creative act.

There is a deep and interesting paradox in productive collaboration. Each participant’s individual capacities are deepened at the same time that participants discover the benefits of reciprocity. But the achievement of productive collaborations requires sustained time and effort. It requires the shaping of a shared language, the pleasures and risks of honest dialogue, and the search for a common ground.

In collaborative endeavors we learn from each other. By teaching what we know, we engage in mutual appropriation. In partnerships we see ourselves through the eyes of others, and through their support we dare to explore new parts of ourselves. We can live better with temporary failures as we rely on our partners’ strengths. By joining with others we accept their gift of confidence, and through interdependence, we achieve competence and connection. *Together we create our futures.*