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11 Positive Change and Mentoring in Adulthood

Abstract: As an adult-developmental relationship, mentoring has been investigated with respect to professional development specifically and human development broadly. This chapter's first half discusses mentoring at work, employing a systems perspective to highlight the role of mentoring in positive change. A case is described in which mentoring encourages finding flow at work. The chapter's second half discusses mentoring in relation to individual change more broadly. It examines an individual's movement toward greater personal complexity through mentored engagement in a complex flow activity, the martial art of aikido.

Keywords: Mentoring; Adult development; Flow activity; Complexity; Good Work; Memes; Modeling; Culture; Apprenticeship; Graduate education; Systems perspective; Aikido.

11.1 Introduction

Positive psychology has been guided by a working assumption that positive change is possible throughout life. In addition, it has highlighted the positive roles that other people may play in an individual's life. One kind of interpersonal tie that may contribute to positive change is the relationship between mentor and protégé. ***Indeed, in its essence mentoring*** – like parenting, teaching, coaching ***– is a developmental relationship***.

As others have noted, mentoring has been a persistently fuzzy construct (Merriam, 1983; Haggard et al., 2010). One reason may be the different contexts in which it occurs. Despite "the classical notion of a young person being guided in all aspects of life by an older, wiser person" (Merriam, 1983, p. 169), mentoring often takes place – and has been most extensively studied – within particular contexts: programs serving at-risk youth, graduate/professional education, and the transition to work and/or organizational membership (Allen & Eby, 2007). Regarding many features (e.g., level of closeness), definitions of mentoring disagree. However, there is reasonable consensus that across diverse contexts mentorships are developmental

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relationships that are asymmetrical (the mentor is more experienced), reciprocal (a distant role model is not a mentor), and sustained (a single interaction, however formative, is not a mentorship).

This chapter focuses on mentoring during adulthood, a topic studied extensively in recent years (Allen & Eby, 2007; Ragins & Kram, 2007). For example, catalyzed by Kram's (1985) important study of mentoring at work, researchers have traced the developmental course of mentor-protégé relationships, examined their negative as well as positive aspects, and identified multiple functions that mentors may play for protégés in relation to both their psychosocial and career development. Considerable research has examined the possible benefits of mentoring for the protégé, with greatest attention devoted to the positive academic and professional outcomes associated with being mentored. Increasingly, research also has addressed how mentoring may benefit the mentor and the organization to which the mentor and protégé belong (Tong & Kram, 2012). Mentoring has been ascribed psychosocial benefits for the mentor such as a sense of personal fulfillment, and career benefits such as higher rates of promotion (Allen et al., 2006; Eby & Lockwood, 2005). From an organizational standpoint, more research is needed but mentoring has long been viewed as supporting efforts to integrate new workers, develop leaders, and facilitate generational succession (Kram, 1985).

In the Good Work Project (Gardner, Csikszentmihalyi, & Damon, 2001), a series of interview studies that investigated the conditions of excellent, ethical and engaging work (*good work*) in the professions, mentoring emerged as one possible contributor to good work. However, in contrast to the impact of the mentoring relationship on protégé, mentor, and organization, the literature on mentoring at work has been largely silent on the significance of these relationships for the well-being of the profession in which mentor and protégé work and therefore, indirectly, for the well-being of those served by the profession.

A study of mentoring "lineages" in science (Nakamura, Shernoff & Hooker, 2009) was conducted as part of the Good Work Project's Transmission of Excellence Study. It investigated whether and how mentors play a role in the perpetuation of good work across generations by helping novices learn what good work looks like in their profession and how to do it. The next section describes the evolutionary systems perspective on mentoring that framed the study of scientific lineages and summarizes some of the study's key findings. The second half of the chapter carries forward the theoretical perspective and the focus on adulthood but shifts attention from the role of mentoring in professional formation to its role in positive adult development more broadly.

11.2 Good Work and Good Mentoring in Science

From an evolutionary systems perspective on culture (Inghilleri, 1999; Massimini, Csikszentmihalyi, & Delle Fave, 1988) and creativity (Csikszentmihalyi, 1988, 1999),

culture can be viewed as the aggregate of a society's symbolically encoded information: knowledge, practices, and tools as well as values, norms, and beliefs. A culture is comprised of many specific *domains*: professions, arts, cuisines, technologies, and so on. The basic unit of cultural information was dubbed a "meme" by biologist Richard Dawkins (1976) to underline the notion that like a gene in the biological context, an element of culture – a theory, song, shovel – undergoes processes of variation and selective survival across generations. Applying this perspective to the world of work (Gardner, Csikszentmihalyi, & Damon, 2001), a profession such as science encompasses three interacting elements: the domain, person, and field. The cultural *domain* (e.g., scientific concepts, instruments, values, findings) evolves over time. The *individual* in his/her role as student and later practitioner masters the domain and contributes to it (e.g., presents theory or results). The social *field*, the community associated with the domain, preserves or transforms the domain's contents. Most notably, its gatekeepers elicit and judge contributions to the domain and also transmit the domain to the next generation. In the field of science, the former include funders, journal editors, faculty search committees; the latter include textbook writers, teachers – and *mentors*.

Mentors have traditionally been thought of in terms of the functions that they serve for the protégé (primarily psychosocial and career support; Kram, 1985). But they can also be thought of in terms of the memes that they selectively make available to their protégés and the means by which they make them available.

In many lines of work, including the sciences (Zuckerman, 1977), self-conscious lineages or lines of descent exist. In the study described in this section, semi-structured interviews were conducted with 36 members of three "mentoring lineages" in science. The "heads" of the lineages were senior scientists identified through research and by experts in their field as exemplars of the two manifest dimensions of *good work* as defined by the Good Work Project (the third, subjective dimension of good work is workers' experience of meaningful engagement.) That is, the lineage heads' work was regarded as high in quality (excellence) and they had reputations for scientific integrity and responsibility (ethics). Further, their labs had produced many active scientists. In each lineage, we interviewed the lineage head (Generation 1, or G1), scientists who had trained with the lineage head (i.e., Generation 2s or G2s), and scientists who had trained with these former students of the lineage head (i.e., Generation 3s or G3s).

11.2.1 Mentors' Memes

In terms of memes, quantitative and qualitative analysis showed that several practices and guiding values essential to good work, notably honesty and integrity in research and fair and equal treatment of others, were discussed by all three lineage heads. Moreover, these "good-work" memes tended to be absorbed by all three lineage

heads' students, who in turn tended to hand the values and practices down to their own students. Values such as honesty typically are acquired (or not) prior to adulthood. However, a newcomer to a profession may not know how these basic values translate into professional practice; for example, the handling of data or the reporting of results.

Alongside these shared "good-work" memes were lineage "signature" memes. That is, each lineage head embodied a different variation of good work. Excellence and responsible practice were given distinctive expression by each of them, understandable in terms of factors such as background, personality, and priorities. There is not just one way to do good work. Stated broadly, one of the lineage heads put greatest emphasis on the relation to the domain; one, the relation to the field; and one, the relation to the wider society. Furthermore, some distinctive memes were embodied but not endorsed by mentors; and some memes were absorbed by students while others were not.

To illustrate, an eminent cell biologist, Joseph Gall, was viewed by former students as a paragon of integrity and fairness – good-work memes – like the other lineage heads. For example, his lab became a haven for talented female students at a time when women in science were still relatively uncommon and many were encountering discrimination. In terms of his signature memes, he was distinguished in part by an unswerving focus on the research process itself, which he had loved since childhood. Many scientists of all generations in all three lineages mentioned their intrinsic motivation as scientists but only in Gall's lineage did the mentor tend to be described as strongly reinforcing this focus on the relationship to the domain. As in the other lineages, some of Gall's signature memes could be traced across generations, while other practices (e.g., neatness) and personal qualities (e.g., reserve) were not emulated by mentees.

In addition to exemplifying good work, Gall provides an example of the organization of a life around flow (the experiential state of full absorption in an ongoing activity; Csikszentmihalyi, 1990), under conditions – the elite ranks of science – that can undermine intrinsic motivation. Whereas many scientists step away from the lab bench when they become highly successful, Gall's daily conduct and larger career decisions continued to be guided across adulthood by his love of the hands-on work of science. As he put it, "enjoying the process of doing the science as opposed to being focused only on the goal is very important." The terms in which he described his work capture his intrinsic motivation: "awe and wonder," "so enjoyable," "it's just beautiful," "something new every day," "pleasurable." A former student described Gall's reluctance to leave the bench to take a phone call letting him know that he had received a prestigious honor. His comments make clear that research has been for him a flow activity. Indeed, when Gall described his work, he noted his "ability to concentrate, not to be distracted" and observed that he may be "very disconcerting to other people in the degree to which I can concentrate on something and not pay too much attention to what's going on around me."

11.2.2 Mentors' Means of Influence

In addition to the question of *what* was perpetuated across generations, the study addressed *how*, behaviorally, mentors were perceived as having an effect on mentees. The topic has been given comparatively little attention in research on mentoring at work. The sciences are like traditional arts, crafts, and trades, in the sense that much of the learning takes place through lengthy apprenticeship and relies on the action of the mentee – it is learning by doing. This key feature should be kept in mind as the overarching context in which the mentoring studied took place. All apprenticeships do not become mentorships. Indeed, graduate advisor-advisee relationships hold the potential for both exploitation and neglect. However, they are of interest in the study of positive development because the extended relationship and guided participation (Vygotsky, 1978) that define learning by apprenticeship create rich opportunities for mentoring relationships to form and to catalyze enduring change. This is consistent with developmental research that implicates other long, immersive engagements – military service, good marriages – in lasting psychological change during adulthood.

Three means of influence within these apprenticeships recurred in the lineage heads' and mentees' interviews: *informal talk*, *serving as a model*, and *shaping the environment* so that it extended the mentor's own direct influence. *Informal talk* was a means of mentoring for all three lineage heads. However, it was less salient than one might expect given the conventional image of mentors as sources of guidance and counsel. Instructing, directing, and close Socratic questioning were not mentioned frequently by the lineage heads. Exhorting, prescribing, and scolding by all accounts were absent from their interactions with mentees. The primary forms of talk ranged from task-focused dialogues about the student's work, to wide-ranging group discussions; the conversations tended to have expressive as well as instrumental functions.

Modeling appeared to be a more pervasive mode of influence. To a great extent, the lineage heads described, and were described as, affecting mentees through example. The majority of mentees reported that observing and emulating the lineage head was an important means by which they had learned. In the lineage heads' case, modeling and conversation were mutually reinforcing—two means by which the same memes were communicated. It may in general be most effective when mentors use modeling and conversation together, enacting the values and practices they endorse and making tacit lessons explicit through comments.

The lineage heads also described deliberately *creating environments* that were positive developmental contexts. They did so by shaping the physical environment, the culture, and the social system in which their mentees worked. The importance of this cannot be overstated. When learning occurs through apprenticeship, the mentee is typically immersed over a long period of time in the microcosm – the small world – of a lab, studio, or workplace (cf. Gallimore, John-Steiner, & Tharp, 1992). The environments created by the lineage heads *complemented* their own direct impact: novices absorbed technical knowledge and skills from "step-ahead peers,"

individuals possessing greater experience yet not so advanced that they could not be emulated (cf. Vygotsky, 1978). The environments also *amplified* the lineage heads' direct impact: their ethos and structure embodied the mentors' values.

As was true of the memes that the lineage heads embodied, the means they employed were three variations on a theme. There appear to be different ways of mentoring well, just as there are different ways of doing good work. For example, Joseph Gall fostered an environment that was quiet, harmonious, and "nice" whereas another environment was characterized by high energy and constant interaction. Gall placed greatest emphasis on providing a model for his students. He observed, "I think my major function is to work with [students] enough that they see how I work." Former students echoed this view of his approach to mentoring, and appreciated the way of life that he modeled: "He was obviously having a good time doing what he was doing, and he made it look like a very good life."

11.2.3 Additional Features of Mentoring Relationships in the Lineage Study

Considerable research on mentoring has examined the quality and characteristics of mentor-protégé relationships. Among the scientists in the lineage study, the quality of the relationship with the primary mentor, as conveyed in the interview, was strongly associated with the number of memes ascribed to the mentor. Mentee descriptions of the most positive relationships indicated that the mentors were perceived as providing multi-dimensional support. For example, one important aspect of support at this advanced level of training in science was the mentor's balancing of intellectual freedom and guidance. Details varied across relationships but the common theme was that students received both the freedom to pursue their research and input from the mentor when it was needed.

Several additional factors that emerged in the lineage study are essential to mention, from the standpoints of both theory and practice. They temper any impression that the mentoring typically entailed a process of radical transformation. Further, they dispel any impression that professional formation is a unidirectional process – an impression that might be created by the evolutionary systems perspective on professional formation adopted here, with its emphasis on the transmission of culture down the generations and its valorizing of the survival of a profession's defining mission (e.g., patient care, student learning, advance of knowledge) and principles of conduct (e.g., professional integrity). These additional factors are selection and affinity, and mentee agency and initiative.

The lineage study focused on the influence of the mentors' memes on subsequent generations. At the same time, mentor and/or mentee sometimes chose the relationship based on preexisting affinities. For instance, Gall tended to select students with a love of science, avoiding potential advisees whose orientation was careerist. As a mentor, he thus was reinforcing students' preexisting intrinsic motivation and

assuring by example that it is possible to have a successful career in science without chasing after success; he was not typically instilling a love of science in extrinsically motivated students.

In addition, although the lineage study focused on the ways that mentors influence mentees, there were multiple ways in which mentees played an active role in these relationships. For example, many mentees had sought out their mentors, although not always for the qualities they would later emulate. Mentees initiated conversations when they needed guidance. They actively attended to and emulated their mentors and step-ahead peers. Although some mentees identified memes that they had absorbed unconsciously (e.g., mentoring practices), others described actively accepting some of their mentor's memes and deliberately rejecting other memes. They described combining the influences of multiple mentors, integrating what they were absorbing with their own preexisting preferences and dispositions, and consciously disavowing the negative example of "anti-mentors" they encountered. All these processes highlight the agency of the mentee. They may lead to the emergence of new memes and in any case contribute to formation of the mentee's distinctive set of memes.

The lineage study adopted an evolutionary systems perspective on mentoring in the professions. The perspective helps illuminate the contribution of mentoring to continuity and change in a profession's values, practices, and other memes. Of particular interest are memes that safeguard good work in the profession across generations as conditions in the profession change. The second half of this chapter turns from mentoring during the transition to work and professional formation, to mentoring that affects an individual's development more broadly.

11.3 Mentored Development in a Complex Flow Activity

The canonical image of non-work mentoring in adulthood may be the relationship with an older individual (a relative, neighbor, former coach or teacher) who offers practical wisdom (Schwartz & Sharpe, 2006) or provides a model regarding the navigation of life in general. Non-work mentoring was addressed in early discussions of mentoring in adulthood (e.g., Levinson, 1978; Vaillant, 1977) and continues to be a focus of research on youth mentoring (Rhodes & DuBois, 2008), but the topic has not been central to recent theory and research on mentoring and adult development. Yet it brings together two central concerns of positive psychology: the conditions of significant positive change and the constructive role that others play in people's lives.

The study of lineages in science examined mentors' "meme pools" and the larger cultural domain of science in terms of variants of good work and shared versus signature memes. Another feature of cultural domains is their *complexity,* or degree of internal differentiation and integration. Pertinent here, the complexity of a domain may affect its capacity to promote positive change at the individual level (Inghilleri,

1999; see Csikszentmihalyi, 1999, for a discussion of the opportunities for change at the cultural level that are associated with a domain's complexity). The more complex a domain, in theory the greater the developmental opportunities it contains and the more important mentoring becomes. The experiential model of optimal development (Rathunde & Csikszentmihalyi, 2006; cf. Csikszentmihalyi, 1990) suggests that movement toward higher *psychological complexity* is favored when optimal experience (i.e., flow) is able to serve as the selective mechanism determining an individual's allocation of attention and use of time. Thus a logical place to study optimal development is in cultural domains with which individuals freely choose to engage.

This section draws attention to mentoring in what might be called the *third commitments* of adult life. These are life domains that hold a place in some individuals' lives alongside adulthood's two normatively primary commitments, work and family. Common third commitments are religious or spiritual activity, civic engagement, and leisure. One feature of third commitments is that unlike paid work, they are not as a category defined by extrinsic rewards and expectations. The profession of science, the focus of the first half of the chapter, has tended to attract individuals who find their work intrinsically as well as extrinsically rewarding (Gardner, Csikszentmihalyi, & Damon, 2001) but many occupations do not. Third commitments are likely to better illuminate the relationship between positive experience (here, flow) and mentored development. We examine a longtime practitioner's account of mentored development in his third commitment, the Japanese martial art of aikido. The case comes from a set of interviews with serious aikido practitioners (*aikidoka*) in the U.S. that explored their experiences as students and/or mentors. The interviews were conducted as part of the Transmission of Excellence Study.

The first half of this chapter adopted a mentor-centered perspective in order to examine the effects that exemplars of good work have on their mentees. To illuminate the role of mentoring across the unfolding of an individual's developmental path, this half of the chapter shifts to a protégé perspective. This half of the chapter, like the first, considers mentoring that is tied to a specific cultural domain and takes the form of master-student apprenticeship. An evolutionary systems perspective is again adopted. Given the relative lack of research on this kind of mentoring, rich description is presented.

11.3.1 Aikido as a Complex Flow Activity

Aikido is a martial art that originated in Japan during the 1920s and 1930s, and following World War II diffused to Europe, the U.S., and elsewhere. As developed, practiced, and taught by its founder, Morihei Ueshiba (1883-1969), aikido is one example of a *complex* cultural domain. It is a martial art yet its goal is social harmony, it integrates mastery of a tradition and creative self-expression, and it is a physical practice meant to train the mind/spirit as well as the body and harmonize (integrate) them.

The martial arts are thought to afford opportunities for flow in daily life (Csikszentmihalyi, 1990) and for positive individual change over time (Saotome, 1989). The following description of a black belt test, based on the accounts of multiple observers and the student himself, illustrates the experience of flow in the practice of aikido:

> [T]he speed and intensity of the attacks increased, and yet there was still a general sense of time's moving slowly, at an unhurried, dreamlike pace.... [He] was beginning to get the feeling that he was not "doing" anything at all, that the movements of his body were "just happening" without thought or effort. The exam continued in this spirit, like a long, hypnotic phrase of music.... He experienced no effort or strain whatever.... He had no question that he would be hit or trapped. If need be, he could go on forever.... (Leonard, 2006, pp. 91-93)

Based on theoretical discussions of complexity and human development (Rathunde & Csikszentmihalyi, 2006), we can expect that the possibilities for positive change through participation in a flow activity will be greater and their duration longer the more complex the activity is – if the novice's engagement with this complexity is scaffolded in some way.

In martial arts such as aikido, master aikidoka and the schools (dojos) they establish provide this scaffolding. Development originally took place through immersion in a long-term, residential, master/apprentice relationship. This relationship embedded the novice in a community of practice and a self-conscious lineage. In the latter respects it resembles the mentoring in graduate science education discussed earlier. Physical practices such as aikido also bring into perspective a characteristic of all cultural domains: their intergenerational persistence depends heavily on their embodiment in human carriers.

11.3.2 Aikido and the Growth of Vital Engagement

The U.S. aikidoka on whom this section focuses had been training intensively and teaching, alongside a full-time job, for more than two decades. His dedication had led him to be singled out by his teachers ("I was always there, all the time"). He summarized: "I've always had people that I could watch and learn from, who gave me a model not only technically, gave me a feel for what the technique was like, but gave me models about aikido in general; as a technical art, as an interaction between various people, as a teaching art, as a creative art." He has had three mentors, all Japanese, and continues to think of them as his teachers. The most senior (Generation 1; hereafter, G1) had been a full-time, live-in apprentice (*uchi deshi*) of the founder of aikido (G0 in the lineage). The other two were senior students of G1 who had followed him from Japan (hereafter, G2a and G2b). One of them (G2a) was this aikidoka's first mentor but left aikido a few years after the aikidoka began studying with him, leading to the latter's assumption of teaching responsibilities after only four years of training. Over time, the relationships became "very close," characterized by mutual trust.

The aikidoka's commitment to this cultural domain appears to have evolved over time. By his account, the origin of his commitment was simple: "It really fascinated me." Having been brought along to a class by his brother, "something appealed about it and I just kept doing it. And I never really sat down and analyzed, 'Why am I doing this?'" His first mentor (G2a) influenced him less through his teaching than his stance toward aikido: "it was his attitude of how important it was to him that convinced me that it could be important." He remains fascinated, two decades later: "'*What are you going to do today?*' …. 'The same thing I did yesterday.' '*When are you going to stop doing that?*' 'When it stops being interesting.'" Of his current, increasingly self-directed practice he ventured: "What fascinates me, *I think,* is being able to take anything that I run into [e.g., a book, a museum exhibit] and bring it here and explore it…. It never gets boring." His goal is "development, continued development." Of aikido, he suggested that "training as a path to improving yourself is the core to it." In his view, aikido's value is that of the monastic traditions generally: "Simple work every day, and your mind on something higher than yourself."

It appears this aikidoka followed one of three logically possible paths to a life organized around a vital engagement – a source of both absorption (flow) and meaning (Nakamura, 2001). His path began in initial fascination with the activity itself, to which meaning then accrued. Alternatively, vital engagement with a domain might begin purely because of its perceived importance. Or, from the start it might be perceived as both important and enjoyable. The aikidoka's goals for his students are consistent with having come to be vitally engaged with aikido: "The most important thing that you can give them is a desire to do it. If you can convey a sense of how valuable it is, and how enjoyable it can be, that's all [they need]. If you give them that, the rest of it they'll do."

11.3.3 The Mentored Development of Complex Capacities for Action

Movement toward an increasingly complex self-environment relationship occurs through engagement with more and more difficult challenges in a domain (Rathunde & Csikszentmihalyi, 2006). In this aikidoka's account, development in aikido requires commitment to many years of consistent practice, and keen attention to the models provided by mentors.

In terms of *memes* absorbed, the aikidoka closely studied and emulated G1's movements, which he admired: "It's beautiful… He [G1] can control everything that's going on and make it look effortless." G1, the aikidoka reasoned, had internalized the movements of the founder himself. He absorbed G1's commitment to creativity, and G2b's commitment to disciplined work. As already noted, early in his training he absorbed from his first mentor (G2a) a view that aikido has value. The "idea of openness," discussed shortly, was associated with G1, whose posture and movement

embodied it. In addition, both G1 and G2b were models of continued development, "always working on something."

In terms of *means of mentoring*, the aikidoka was not taught aikido by G1 and G2b as a highly codified basic "skill set" that cannot be changed; "I don't know that I would have stayed if I was taught that way." While recognizing that some individuals are comfortable formalizing and teaching what they know without change, he characterized this as a kind of stagnation that he would find "boring" as student or teacher. This said, he makes clear that his "learning mode" was markedly different prior to the past 5 or 6 years. Until then, it was "Be with your teacher, learn the technique, develop your skills, listen, steal everything you can, absorb everything you can." To a significant degree, he perceived development in aikido as technical and dependent on the mentee's willingness to "grind."

Comparison with apprenticeship in the science lineages is instructive. As a physical practice originating in Eastern culture, the importance of modeling and direct experience is even greater in aikido and as such the Japanese mentors' use "talk aimed at you" less. Developing involved getting "a feel" or tacit sense through extended, close watching and through doing. A developmental meme that the aikidoka absorbed from G2a was to be proactive as a student, like the apprentice consigned to sweeping the floor in an artist's studio. He was told by G2a, "Don't expect them to give it to you; steal it." In terms of the balance of challenge and support provided by his mentors, the early experiences appear shaded toward challenge. G1 could be "very severe.... intimidating." A developmental meme that his students reported absorbing from the aikidoka was "take feedback seriously but not personally."

In the science lineages, mutual selection contributed to successful mentorships. The aikidoka counseled recognizing and avoiding harmful mentors as a part of selection – "You should evaluate that before you start." However, "if someone fascinates you, then if they say, 'We're walking this way,' then we're walking this way for a while." That is, trust is an essential foundation of mentored development: "you have to trust them and you can't judge."

He was conscious that he absorbed distinct but complementary memes from the three mentors ("you get a little bit from all of them") due to differences in personality, priorities, and length of experience. He echoed the novice scientists who learned differently from step-ahead peers and from their advisors: "when I first saw [G1], he was so much better than we were that we had no idea what he was doing" – the complexity of his motions was too great – whereas with G2b it was more possible to "see the process."

To return to the notion of development as growth of psychological complexity, the aikidoka provided a vivid description of the increase in complexity through differentiation and integration modeled by his mentors. He saw them "physically take an idea" and work on it for two or three years; he watched it subtly change over time; eventually he saw it get fully internalized. A measure of its integration was that it would "disappear."

Finally, training methods were among the memes that the aikidoka absorbed from his mentors. His mentors' teaching practices not only influenced him directly, as a student, they also became examples for him as a teacher. In the same way, many of the scientists in the earlier lineage study both consciously and unconsciously emulated facets of their mentors' approaches to mentoring when they had students of their own. The aikidoka felt he had integrated ("welded together") distinctive aspects of his mentors' approaches as teachers. He expects students to train hard and become technically proficient – "able to demonstrate clear, beautiful technique." His students are perceived by others as "serious," "kind of severe," with "a little bit of an edge" – terms he applied to G1 and to himself earlier in their respective aikido careers. As noted, over the many years of their relationships, the aikidoka could see his mentors' demonstrations evolve as they continued to explore and develop; he has been determined to do the same ("stay fresh") as a teacher.

In at least one respect, the aikidoka has modified what he experienced as a student. Like his mentors, he eschews "telling people how to do a technique" ("put your foot *here*"). However, he talks more, not to tell his students what to do step-by-step but to draw on his explorations and offer students an idea or image verbally along with demonstrating a movement. His development as a practitioner has contributed to his teaching. The reverse is also true. Through showing and telling rather than following tradition and demonstrating without commentary, his own understanding has developed: "if I wasn't challenged to try to figure out how to explain it, I don't know if I'd understand it as much."

11.3.4 Integrating Power and Gentleness

A conversation with the aikidoka's original mentor (G2a) 5 or 6 years earlier had catalyzed a qualitative change in his approach to aikido. This kind of input from a mentor may be especially important developmentally. His former teacher told him that if he did not make the practice his own, he was wasting his time; "I had to find something that I wanted to do, and do it." Whereas previously he had focused on emulating his mentors, he began to focus on "working on his own stuff." In contrast to his earlier approach, "Now it's more digesting and developing what you stole." His current view is that "there has to be something of you in it"; it should be "artistic in a creative sense." G1 is again a model. In the aikidoka's view, disciplined work is the necessary foundation for creativity, as it is for visual artists (Csikszentmihalyi & Robinson, 1986).

Previously, his style "was much more rigid and much more aggressive than it is now"; his training focused on conditioning, physical toughness, and hard throws. For 5 or 6 years, while also exploring other questions in his practice (What does it mean to be fluid? What does it mean to be an art?), he has tried to learn if it is possible, physically, to be simultaneously powerful and gentle. The trigger event was an experience adjusting his interactions on the mat to take care of a disabled partner

and then wondering if the gentleness could be generalized to any attacker. Given the severe style he had cultivated, this meant experimenting physically with restraint, openness, and gentleness of technique while maintaining its martial quality ("we're not dancing"). There is clear, immediate feedback in these efforts: when he succeeds in being "powerful" but "soft," he can press someone large into the ground and they smile at him. In his view, positive change is "real" only if it can be enacted on the physical plane; development occurs "from the outside, in." He described his efforts to achieve greater physical openness as "difficult," "dramatic," and "very personal." He is pursuing "his own stuff"; at the same time, G1 in particular is a model of the integration of power and openness in his own technique and posture. Further, this integration of opposites is fundamental to the philosophy of aikido. Leonard (2006) suggested that the flow experience he had observed was a manifestation of this characteristic of aikido:

> The genius of Aikido is to transform the most violent attack, by embracing it, into a dance, and it was the essence of dance we saw there on the mat – neither powerful nor delicate, neither destructive nor creative, neither masculine nor feminine, but all such seeming opposites connected and drawn to a point of balance. (Leonard, 2006, p. 92)

This extended example has described one way that mentored engagement in a "third commitment" can provide a sustained source of flow and meaning, and a pathway to greater psychological complexity. Other developmental pathways and other roles for mentoring can be envisioned both within aikido and beyond it. In closing, we examine one set of general implications from the case study.

11.3.5 Forms of Complexity

In the previous section, the domain of aikido was selected in part because of its complexity, and the need for mentoring in the face of complexity was a focus. One conceptual yield of examining this case in detail concerns differentiation of the concept of complexity in mentored development. The aikidoka's case suggests the following types of complex domain. In *simple complexity* a cultural domain integrates a graduated set of increasingly demanding challenges. Interaction with the domain can lead to the growth of a skill or integrated set of skills, accompanied by the optimal experience of flow (Csikszentmihalyi, 1990). The dynamic is described as movement up a flow channel between excess challenge (producing anxiety), and inadequate challenge (producing boredom). This "simple" complexity describes a wide range of domains. As Csikszentmihalyi has observed in the example of chess, complex and culturally valued domains of this kind contain developmental promise but also an inherent developmental risk. They may be so complex that they can be a source of enjoyment and the organizing focus of a life for years as the individual acquires, refines,

and integrates increasingly high levels of skill. Their challenges, however, may be finite; if they are exhausted, the individual can be left with the existential dilemma of feeling there is, so to speak, no place left to grow. In the aikidoka's account, for many years his efforts were organized by the goals of developing technical mastery and gaining an increasingly refined "feel" for the art. His account suggests that at his level of mastery, boredom is a greater threat than anxiety and increasingly the challenges he engages are self-generated.

In an extension of simple complexity that might be called *multiplied complexity,* the fullest form of an activity intrinsically contains two or more fundamentally distinct sets of challenges, each itself characterized by a graded set of opportunities for action (i.e., simple complexity). Mastering the activity requires mastering distinct sets of complex challenges and integrating them. An example is biathlon; athletes must learn to both ski and shoot, as well as to coordinate the two. Compared to an activity characterized by simple complexity (e.g., skiing or shooting alone), developmental opportunities are multiplied in activities of this kind, as are possible developmental trajectories. Development can still be summarized as movement up a single flow channel (one grows as a biathlete), but one can also envision sequential trajectories or switches between trajectories, with a higher-order set of challenges related to integrating distinct developmental processes, capacities, and performances. In the aikidoka's case, his approaches to both learning and teaching became more complex over time, he perceived gains in his practice and his teaching as mutually beneficial, and each mentor provided models of both learning and teaching. Although in these ways the two sets of action opportunities were harmoniously interwoven, teaching contained unique challenges and as a teacher he consciously deviated from the practices of his mentors. In other domains characterized by multiplied complexity there might be less integration and mentors might be influential in other ways. Thus, while this distinction between simple and multiplied complexity in practice sometimes may blur, it has the value of suggesting new questions concerning possible developmental trajectories and the mentor's role in supporting them.

Finally, in *dialectical complexity* an activity requires integrating two sets of challenges that are not just different – they are inherently in tension or indeed in opposition. Enhancing one of them would seem to undermine the other. Consider one example, the challenge of maintaining "disinterested interest" as a professional (Hughes, 1963). Good work in medicine, law, or education requires passion, which encourages full and sympathetic engagement with a patient, case, or student. Concurrently good work requires dispassion, which enables impartial exercise of expert judgment. Dialectical complexity entails integrating the two in professional judgment and action. One both steps in, and steps back. Dialectical complexity further expands the developmental possibilities held by domains. It also raises new questions about the developmental paths presented by cultural activities, such as the question of what kinds of internal and external resources may be required in order to be both passionate and dispassionate, as in the example above. We have been considering mentoring

as an external resource. For example, mentors may encourage engagement of qualitatively different forms of complexity (G2a's urging to integrate tradition and creative self-expression); they may show through their own embodied example that dialectical complexity is possible (G1's manifestation of openness and power). Concerning internal resources, the concept of complex personality (Rathunde & Csikszentmihalyi, 2006) mirrors this form of cultural complexity, suggesting that to transform a cultural domain (i.e., to create), an individual must have the capacity to function in two opposed ways (e.g., to think divergently and convergently) and the metaskills to move between them.

Some cultural activities evolve to possess all three kinds of complexity. The martial art of aikido has provided one example. As detailed in earlier sections, growth of technical skill illustrates "simple" complexity and the concurrent roles of learner and teacher, multiplied complexity; the integration of power with gentleness illustrates dialectical complexity. To draw one example from the sphere of work, investigative journalists must maintain disinterested interest (dialectical complexity), master and integrate skills of inquiry with skills of communication (multiplied complexity), and hone each set of skills to a high level (simple complexity).

Complex *flow* activities are more likely to survive and more likely to lead to psychological growth than complex activities that do not tend to promote flow. Insofar as the rewards of experiencing flow introduce intrinsic motivation for individuals to stay involved and to keep moving toward increasingly complex levels of activity, in this way cultural evolution is affected by *psychological* selection (Csikszentmihalyi, 1990; Massimini et al., 1988; Massimini & Delle Fave, 2000). However, complex systems of all kinds, including cultural domains, are vulnerable to a tendency to break down into more elemental forms. This fragility may be greatest for dialectically complex domains, which integrate across apparent opposition rather than only difference. Dialectical complexity is neither obvious to pursue nor easy to achieve.

Aikido again illustrates this point. A survey of aikido practitioners in Japan and the U.S. about the meaning of aikido (Dykhuizen, 1996) showed that in the process of diffusion, the physical component of the domain was transmitted with greater fidelity than the philosophical or spiritual component. Our interviews suggest that the heads of some U.S. dojos foregrounded the physical practice while heads of others foregrounded the philosophical principles; heads of some likened aikido to dance while heads of others likened it to combat training. To the extent that students in these dojos learn by diligently emulating their mentors, one would anticipate evolution toward distinct and less complex traditions within aikido, carried by distinct mentoring lineages. Because each variant retains a pathway to increasing (simple) complexity, it may remain an attractive source of flow and personal growth for self-selected students. Thus, the influence of individuals like this aikidoka's mentors, who model and encourage the integration of apparently opposed capacities, may be particularly critical to the intergenerational survival of dialectically complex cultural forms.

11.4 Conclusion

The first half of this chapter offered a model of mentoring at work that extends traditional models by focusing on what is transmitted and how. The model foregrounds the role of mentoring in the selective survival and transformation of the cultural domain that defines a profession. The society served by a profession relies on the survival – and evolution – of the memes that support good work. Lineage research suggests that mentors play a role in this process of cultural continuity and change by influencing the development of the next generation.

The second half of the chapter turned to mentoring in one of life's "third commitments," in order to address the role of mentors in positive change more broadly. Pursuits to which adults regularly devote significant time despite the absence of extrinsic rewards may be the clearest examples of the ways a cultural domain fosters individual development during adulthood. An extended case example provided a detailed account of how the complexity of a cultural domain affects the possible paths to greater psychological complexity, and the roles that mentors may play along this path. Analysis of the case suggested that a cultural domain may be dialectically complex and when it is, the opportunities for personal growth are amplified. Mentors may encourage and embody the integration of apparent opposites and create environments that foster dialectical complexity. Alternatively, they may cultivate the realization of one pole of the dialectic. Mentors thus may play a crucial role in the intergenerational preservation or dissolution of dialectical complexity.

Future theory and research might seek to identify other key characteristics of cultural domains that affect the opportunities for positive change they afford and the role of mentors in engaging these opportunities. It might also examine systematically the mechanisms by which mentors encourage movement toward greater psychological complexity.

References

Allen, T. & Eby, L. (Eds.). (2007). *The Blackwell handbook of mentoring: A multiple perspectives approach*. Oxford, U.K.: Blackwell Publishing.

Allen, T.D., Lentz, E., & Day, R. (2006). Career success outcomes associated with mentoring others: A comparison of mentors and nonmentors. *Journal of Career Development, 32,* 272-285.

Csikszentmihalyi, M. (1988). Society, culture, and person: A systems view of creativity. In R.J. Sternberg (Ed.), *The nature of creativity* (pp. 325-339). New York: Cambridge University Press.

Csikszentmihalyi, M. (1990). *Flow*. New York: HarperCollins.

Csikszentmihalyi, M. (1999). Implications of a systems perspective for the study of creativity. In R.J. Sternberg (Ed.), *Handbook of creativity* (pp. 313-335). Cambridge, U.K.: Cambridge University Press.

Csikszentmihalyi, M., & Robinson, R.E. (1986). Culture, time, and the development of talent. In R.J. Sternberg & J.E. Davidson (Eds.), *Conceptions of giftedness* (pp. 264-284). New York: Cambridge University Press.

Dawkins, R. (1976). *The selfish gene*. New York: Oxford University Press.

Dykhuizen, C.J. (1996). *Aikido: A comparative inquiry into cultural context and the practice, meaning, and perceived outcomes of training*. Unpublished doctoral dissertation, Kent State University, Kent, OH.

Eby, L.T., & Lockwood, A. (2005). Protégés' and mentors' reactions to participating in formal mentoring programs: A qualitative investigation. *Journal of Vocational Behavior, 67,* 441-458.

Gallimore, R., John-Steiner, V.P., & Tharp, R. G. (1992). *The developmental and psychological foundations of mentoring.* Unpublished manuscript.

Gardner, H., Csikszentmihalyi, M., & Damon, W. (2001). *Good work.* New York: Basic Books.

Haggard, D.L., Dougherty, T.W., Turban, D.B., & Wilbanks, J.E. (2010). Who is a mentor? A review of evolving definitions and implications for research. *Journal of Management, 37,* 280-304.

Hughes, E.C. (1963). Professions. *Daedalus, 92*, 655-668.

Inghilleri, P. (1999). *From subjective experience to cultural change*. Cambridge, UK: Cambridge University Press.

Kram, K. E. (1985). *Mentoring at work*. Glenview, IL: Scott, Foresman.

Leonard, G. (2006). *The silent pulse.* Layton, UT: Gibbs Smith.

Levinson, D. J. (1978). *Seasons of a man's life*. New York: Knopf.

Massimini, F., Csikszentmihalyi, M., & Delle Fave, A. (1988). Flow and biocultural evolution. In M. Csikszentmihalyi & I. Csikszentmihalyi (Eds.), *Optimal experience* (pp. 60-81). Cambridge, UK: Cambridge University Press.

Massimini, F., & Delle Fave, A. (2000). Individual development in a bio-cultural perspective. *American Psychologist, 55,* 24-33.

Merriam, S. (1983). Mentors and protégés: A critical review of the literature. *Adult Education Quarterly, 33,* 161-173.

Nakamura, J. (2001). The nature of vital engagement in adulthood. In M. Michaelson & J. Nakamura (Eds.), Supportive frameworks for youth engagement. *New Directions in Child Development*, *93,* 5-18.

Nakamura, J., Shernoff, D., Hooker, C. (2009). *Good mentoring.* San Francisco: Jossey-Bass.

Ragins, B.R., & Kram, K.E. (Eds.). (2007). *The handbook of mentoring at work: Theory, research and practice*. Thousand Oaks, CA: Sage.

Rathunde, K., & Csikszentmihalyi, M. (2006). The developing person: An experiential perspective. In R.M. Lerner (Ed.), *Handbook of child psychology: Vol. 1. Theoretical models of human development* (pp. 465-515). New York: Wiley.

Rhodes, J. E., & DuBois, D. L. (2008). Mentoring relationships and programs for youth. *Current Directions in Psychological Science, 17,* 254-258.

Saotome, M. (1989). *The principles of aikido.* Boston, MA: Shambala.

Schwartz, B., & Sharpe, K. (2006). Practical wisdom: Aristotle meets positive psychology. *Journal of Happiness Studies, 7,* 377-395.

Tong, C., & Kram, K.E. (2012). The efficacy of mentoring: Benefits for mentees, mentors, and organizations. In J. Passmore, D. Peterson, & T. Freire (Eds.), *Wiley-Blackwell Handbook of the psychology of coaching and mentoring* (pp. 217-242). Hoboken, NJ: Wiley.

Vaillant, G. (1977). *Adaptation to life.* Boston: Little, Brown.

Vygotsky, L. (1978). *Mind in society.* Cambridge, MA: Harvard University Press.

Zuckerman, H. (1977). *Scientific elite: Nobel laureates in the United States.* New York: Free Press.