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Using Cultural-Historical Activity Theory to Study Clinical Reasoning in Context

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ABSTRACT

The aim of this paper is to describe sources of conflict and congruence in critical areas of practice with caregivers of persons with dementia, using cultural-historical activity theory as an analytic framework. Findings are drawn from an ethnographic study that described the context of occupational therapists’ (OT’s) clinical reasoning in a funded, home-based environmental skill-building program designed to help caregivers manage the daily care of family member with dementia. Data were gathered through observation of intervention sessions, debriefing sessions, semi-structured interviews with therapists, and review of intervention documentation. Primary sources of conflict and congruence within the identified practice context included conflicts between therapists and caregivers about which environmental strategies were best for addressing problems in caregiving and expectations regarding OT and caregiver roles. Areas of congruence included the fit between intervention protocols used to guide treatment and the approaches therapists developed to help caregivers modify care receivers’ living environments. The study revealed the complexity of OT practice and demonstrated practice contexts can be systematically analyzed using cultural-historical activity theory to determine key factors influencing clinical reasoning. The approach also presents an alternative perspective on clinical reasoning that more directly integrates clients/caregivers and therapists as co-constructors of OT intervention.

Key words: Alzheimer’s disease, dementia, occupational therapy
Clinical Reasoning in Context

Introduction

Clinical reasoning is defined as the ways occupational therapists (OT’s) think in the midst of practice and reflect upon their own thinking (1). Prevailing views of clinical reasoning in occupational therapy (OT) have focused on characteristic modes or categories of reasoning including procedural, interactive, conditional, and narrative (1); diagnostic (2), ethical (3), pragmatic (4); and generalization (5). Using these categories of reasoning to study clinical reasoning has revealed the complexity of practice by identifying many dimensions included in therapists’ thinking processes. Additionally, work in this area has provided the basis for educational approaches used to help practicing therapists and students develop skill in clinical reasoning by providing reflective tools and a vocabulary that engenders greater precision in thinking about and justifying treatment approaches (6,7,8).

However, proliferation of these categories of reasoning has led to inconsistent use of terminology that has created confusion about what clinical reasoning entails (5). Moreover, the current focus on identifying and confirming types of reasoning is limited in that it does not represent clinical reasoning as an explicitly collaborative process that is shared between the therapists and client. Because of this, important information about how therapists use physical and conceptual tools, negotiate relationships, and work within the rules of healthcare and the unspoken expectations of clients cannot be revealed. Instead, current conceptions of clinical reasoning emphasize individual mental processes (9) and do not provide a clear way to incorporate shared activity as an integral part of clinical reasoning.

Clinical Reasoning in Context

The context of OT practice is generally acknowledged as an important influence on clinical reasoning (1,4,10—12). Mattingly (13,14) noted that the effectiveness of the clinical reasoning
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process largely depends on the therapist’s skill at reading context. Additionally, although not directly named as clinical reasoning, context is discussed as a prominent influence in areas of practice such as family centered care (15—17) and intervention with caregivers and persons with dementia (18—20). In both these practice areas, the social context is clearly evident, because therapists must work not only with the patient/client, but also with family members and service providers to provide care—which may partially account for their emphasis on context. Furthermore, in both of these practice areas, the need to consider the person and family within specific occupational contexts is considered paramount for developing treatment approaches that maximize therapeutic outcomes (16,18,21).

The most explicit discussions about the influences of context on clinical reasoning in OT have focused on pragmatic reasoning. Schell and Cervero (4) introduced this term based on their view that situated cognition provided a comprehensive way to incorporate context into clinical reasoning. They proposed that attention to context via pragmatic reasoning is an inherent aspect of the therapist’s thinking when incorporating such diverse influences as personal values and beliefs, cultural expectations and power relationships of the practice setting, and current and future issues affecting the patient. Later work focused on pragmatic reasoning further developed Schell and Cervero’s (4) original conceptualization by specifying its internal (personal) and external (practice) aspects in more detail. Aspects of context related to the individual therapist have been named the personal context and include the therapist’s values and worldview (22,23). The practice context, which focuses on externally driven, practical aspects of therapy includes aspects of context such as safety issues surrounding care, physician’s orders, and time and equipment limitations (24), referral to other health professionals (5), and time pressures such as managing therapy sessions that run overtime and constraints posed by patients’ length of stay.
(5), in addition to aspects previously described by Schell and Cervero (4), who identified organizational power relationships, reimbursement options, and available space and equipment.

Both the personal context and the practice context are thought to exert powerful influences on occupational therapists’ clinical reasoning (25). However, additional research is needed to reveal the relationship between context and clinical reasoning (10). A critical limitation of current work is the exclusive emphasis most investigations have placed on internal mental processes as determinants of clinical reasoning (9). This is a serious issue, because the context of clinical reasoning includes not only the therapist’s individual mental processes, but also the specific tools of practice and subtle influences such as cultural expectations embedded in practice settings and clients’ perceptions of what “good therapy” is. It is important to bring such influences to light, in order to avoid pitfalls that can limit the outcomes of therapy (26,27).

A different approach to the context of clinical reasoning that incorporates shared activity is cultural-historical activity theory, which is derived from Russian social science theory as developed by Vygotsky, Leont’ev, and Luria (28). This approach is the basis for similar views of cognition that conceptualize all forms of cognition as products of participation in shared activities (29), such as situated cognition and distributed cognition (30). Placing the emphasis on shared participation changes the basic unit of analysis from the individual to “the (processes of the) socio-cultural activity, involving active participation of people in socially constituted practices” (31, p. 14). A key tenet of this view is the notion of appropriation. Appropriation is a process of cognitive development whereby individuals incorporate shared activity into their own repertoire of thinking strategies (31).

Cultural historical activity theory acknowledges both internal and external influences on cognition, but these influences are viewed as a unified whole (30). Thus, cultural historical
activity theory presents a very different notion of context, emphasizing that “the activity is the context” (30, p. 76), created by the simultaneous influence of the changing relationships within an activity system over time (30). Activity systems are complex formations composed of six elements:

- the subject (person whose point of view being examined);
- the object (problem space or area of concern at which the activity is directed);
- the physical and symbolic tools that transform the object into outcomes;
- the community, or people and groups who share the same problem space with the subject(s);
- the division of labor, which includes power relationships and ways in which tasks are distributed;
- rules, the explicit and implicit norms and regulations that act upon the activity system (28, 32).

Areas of disruption and conflict (discoordinations) and areas of congruence and harmony (coordinations) within and between the components of activity systems represent dynamic aspects of context that exert a strong influence on clinical reasoning. In particular, areas of conflict can provide the driving force behind innovation if they are recognized and acted upon. For example, in a study examining the clinical reasoning of primary care physicians, Engeström (33) reported that when physicians became aware of conflicts between elements of the activity system of office visits provided in a health clinic, they were able to develop a new model for practice. Thus, innovation can occur when conflicts are recognized and the clinician can move beyond his/her current thinking to a new conceptualization of the object or problem space. Engeström (33) refers to this process as an expansive learning cycle. The expansive learning
cycle is similar to the process of moving beyond “stuck points” to a reframing of the clinical situation in which the therapist’s basic assumptions change or are challenged (14).

Thus, cultural-historical activity theory incorporates internal mental processes (the more typical focus of clinical reasoning research), the social and physical environment, and the interactions between these elements as part of the same system. This paper will present selected findings from an ethnographic study that examined clinical reasoning in context. The paper will focus specifically on areas of congruence and conflict revealed through analysis of the therapists’ and clients’ shared activity. Analyzing these areas provides a systematic way to examine the context of clinical reasoning for a particular practice area—in this paper, an environmental skill-building program for caregivers of persons with dementia. The Environmental Skill Building Program (ESP) is an intervention designed to help caregivers at home manage the daily care of persons with dementia. More information about the ESP is included in the Material and Methods section. A research ethics committee at a university in the Northeastern United States approved the ESP when it was originally developed using randomised controlled trial methodology, as well as the ethnographic study discussed in the present article.

**Material and methods**

This study used an ethnographic design known as a focused ethnography, a type of ethnographic study used to gain knowledge about a specific topic within a subculture of persons who share behaviors and experiences (34), as did the OT’s in the ESP. The specific topic for the ethnography was the context of clinical reasoning for the OT’s who worked in the same intervention setting. These OT’s used a common set of protocols to treat clients (caregivers of persons with dementia in the ESP). Cultural historical activity theory (28,32) was chosen as a
theoretical perspective from which to anchor data collection and guide analysis. Theory forms a type of “conceptual scaffolding” (35, p.43) that can be useful in ethnography.

**Theoretical Framework**

Cultural historical activity theory as described by Cole and Engeström (28) and Yamagata-Lynch (31) was used an analytic lens to examine the clinical reasoning of the therapists in the ESP. The six elements of the environmental skill building program’s activity system were:

- The four therapists, who were the focus of study (Subjects)
- The therapists’ aim to provide client-centered intervention focused on helping caregivers to understand and adapt features of their home environment (Object)
- The environmental strategies and ways of working with caregivers (Tools)
- Caregivers, care receivers, and ESP staff, with whom the therapists interacted (Community)
- Ways in which tasks were divided between the therapists and caregivers (who does what), with the therapist serving as a resource and facilitator and the caregiver serving as the expert (Division of Labor)
- Explicit and implicit expectations for behavior within the EBP, including the intervention protocols that therapists were required to follow and the socio-cultural expectations that therapists and caregivers held for each other’s behavior (Rules).

These six elements and their application to the clinical reasoning of the OTs in the ESP are shown in Table 1.

The six elements, which represent the specific dimensions of context in an activity system according to Cole and Engeström (28) and Yamagata-Lynch (32), were then systematically
analyzed by identifying areas of conflict and areas of congruence between them. More detailed information about the theoretical base and its application are published elsewhere (28, 30—32).

Participants

Four OT’s were recruited from a group of six therapists accessible to the researcher who worked as therapists in the ESP, a program serving caregivers of persons with dementia who lived in a large city in the Northeastern United States. These OT’s were a convenience sample of therapists from the ESP who were able to schedule a treatment observation during the time requested by the researcher and who wanted to participate in the study. The OT’s were considered to be part of a micro-culture sharing local understandings and customary ways of working and thus, appropriate for study in a focused ethnography (34). All OT’s had at least five years experience in clinical practice, including experience in “traditional” settings such as nursing homes and rehabilitation centers. All had participated in the ESP for 1 year at the time the study began.

The Intervention Program

The ESP is an intervention designed to help caregivers at home manage the daily care of persons with dementia (18). Thus, it is the caregiver who is the client and focus of intervention in the ESP. The ESP helps caregivers to understand how the physical and social environment of the home influences occupational performance of care receivers with dementia, and builds caregiver skills in problem solving, communication, and environmental adaptation, to better manage problem behaviors of the care receiver and enhance caregivers’ ability to manage their own stress and fatigue levels (18). 6 OT’s worked as interventionists in the ESP and were trained to help caregivers to modify the physical and social components of their home environments, in order to enhance quality of life and occupational performance of the caregiver and care receiver. Intervention protocols directed OT’s to use a collaborative framework in which the caregiver
was considered the expert or lay practitioner (36). For example, in Contact #1 (the first home visit), OTs were directed to “use open ended questions to elicit understanding of problem areas” (37). This protocol guided them to use the basic approach of focusing on the caregivers’ understanding of dementia and the caregivers’ priorities, instead of their own clinical knowledge and agenda. This helped the OTs focus their treatment and give them ideas as how to enact the treatment in highly complex caregiving situations.

Research protocols also included specific environmental strategies designed to address areas such as difficult behaviors and dependency in daily self-care of family members with dementia. For example, management of incontinence included multiple strategies such as use and manipulation of common objects that could cause the care receiver to become confused while in the bathroom, issuing assistive devices and altering the home, and simplifying communication with the care receiver. Even though protocols were clear and comprehensive, the OT’s had to tailor each strategy to the specific caregiving situation. All strategies were developed by Gitlin and Corcoran (18) over a 15-year period and tested using randomized controlled-trial methodology. The ESP is based on four key principles: assessment and treatment of both caregiver and care receiver; use of a collaborative framework; an intervention consisting of at least two sessions (3 to 6 sessions are recommended), culturally appropriate environmental strategies customized to the caregiver and care receiver, active problem solving by the caregiver (and care receiver, if possible) and active skill-training using methods such as modeling and role-playing (38). The ESP consisted of 5 1½ hour home visits and one 20 to 30 minute telephone contact that occurred over a six month period, referred to as the active phase (18). Additional details about the ESP have been published elsewhere (18).
Data Collection

Data were collected using four main methods: Observation, document review, field notes, and interviews (see Data Collection and Analysis Summary, Table II). Each OT was observed while providing intervention for a caregiver on the second and third home visits, for a total of eight observations (two for each of the four OTs). The researcher observed but did not participate in the intervention. The second and third intervention visits were recommended for observation based on prior experience of the co-investigators, who found that early sessions of the ESP were important for development of therapeutic relationships, a key aspect of clinical reasoning. Knowledge of the relationship-building process is essential for understanding the context of clinical reasoning, especially because the ESP dictated an explicitly collaborative approach between the client (caregiver) and the OT. The researcher also reviewed OT field notes pertaining to the caregiver observed, to gain further knowledge about the OT’s thinking process.

The researcher attended debriefing sessions that were conducted by the co-investigators and the project director for all therapists in the ESP. These debriefing sessions consisted of bi-monthly meetings when therapists met to discuss their caseloads and brainstorm solutions to issues that arose during the intervention. The researcher took field notes using the procedure identified by Spradley (39), completed contact summaries (40) following each observation, and reviewed the OTs' documentation of their intervention with the caregivers observed in the study. Two semi-structured interviews lasting 1 to 1 ½ hours each were conducted with each therapist after caregivers completed the active phase of intervention. In the first interview, OTs’ were asked to describe their work with the particular caregiver whose intervention was observed by the researcher, including whether the session observed was the same or different from work with other caregivers and the kinds of things that influenced them most while working with this
particular caregiver. The second interview consisted of further discussion about topics that therapists initiated at the first interview. Interviews were audio-taped and transcribed.

Data Analysis

Data analysis was conducted using three methods: contact summaries, charting of conflicts and congruence, and thematic analysis assisted by a qualitative software program, Nud*IST version 5 (41). Contact summaries were developed after each debriefing session, interview, and field observation, to capture details that might have been lost otherwise (40). Conflicts and congruence in the activity system of the ESP were charted using the framework adapted from Engeström (33) after observations of treatment sessions. An example of a chart showing conflicts and congruence is shown in Table III. Areas of conflict and congruence identified at observations were then discussed with the OT’s at subsequent interviews, to gain a more complete understanding of what was going on from their point of view.

Thematic analysis of topics emerging from the data followed the iterative coding process described by Strauss (42), which may used in ethnography to develop descriptions and explanations of data (43). All data was entered into and coded using the qualitative software program. The capacity to search for key terms across data and create reports helped facilitate the coding process. Open coding was performed first, then initial codes were elaborated through axial coding, and finally, core categories and selective coding were developed. Next, these core categories were examined to determine their interface with the theoretical framework of cultural-historical activity theory. The processes used for this procedure consisted of researcher memoing, concept maps, and further development of the charts used to record areas of conflict and congruence at OT intervention sessions with caregivers. A dynamic representation illustrating the ESP was developed using a simple computer animation of the areas of conflict
and congruence, to better understand the interrelationships between and among the components of its activity system. This animation illustrated conflict and congruence in areas of the activity system such as those shown in Table III. Finally, themes identified within the cultural-historical activity theory framework were contrasted with prevailing views of clinical reasoning as types of reasoning, as a means of comparing diverse explanations for the study results (44).

Several strategies were used to ensure credibility of findings as described by Lincoln & Guba (45, pp. 301—316). These included prolonged engagement and persistent observation, with direct involvement via observations, interviews, and debriefings 1 to 4 times monthly over a 21 month period; data triangulation through review of multiple data sources including observations, interviews, and therapist documentation; peer debriefing by having a graduate student review and discuss findings with the researcher; and member checking that included verification of interview themes by the OT and discussion of findings with therapists in a group session and individually. Additionally, the study was submitted for an external audit by a colleague experienced in qualitative research but not involved with the study otherwise, using procedures described by Lincoln and Guba (45, pp. 378—392). Memoing and reflective journaling were also conducted, to ensure accuracy and rigor in analysis (44).

Results

The most significant areas of conflict and congruence revealed when the environmental skill-building practice was analyzed as an activity system (see Table I) are presented as follows:

- Conflict between therapists and their aims and directives to provide caregiver centered interventions
- Conflict and congruence between therapists and caregivers
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- Conflict and congruence between therapists, the caregivers, and the environmental strategies used in the intervention
- Conflict between therapists, caregivers, and the ways that tasks were distributed between them
- Congruence between the protocols of the environmental skill-building program (rules guiding assessment and intervention), and the conceptual tools consisting of the specific OT approach to caregivers.

These themes are described below, starting with those related to the focus of OT intervention. More than one element may be present in each example, but only the most prominent elements emerging from the data are named and described. Quotes that synthesize the key ideas behind the theme are used as summaries.

**Conflict between OT’s and the Intervention Focus**

The OT participants often appeared to experience a conflict between their intention to provide client-centered, collaborative intervention with caregivers and the more familiar role of enacting the role of an expert working with “patients” in more traditional practice settings. During research interviews, OTs frequently discussed how their work with caregivers differed from other settings in which they practiced. An OT working full-time in a long-term care facility summarized these differences:

> (working in the ESP is) more—the word that comes to mind is collaborative—we're all in the circle, holding hands, as opposed to me being in the center saying, "You go here. You go there. Everybody march! This way!" Because at any time they (caregivers) can say, "let's go right" and then it's off we go, to the right.

**Conflict between OT and Caregivers**

During interviews and debriefing sessions, the OTs discussed conflicts and congruence between themselves and the caregivers they treated, related to their values, beliefs, and worldviews. The
example below illustrates a conflict between a caregiver and an OT, based on the OT’s difficulty accepting the caregiver’s beliefs as a witch. The OT reported:

(The caregiver) led me into the main room, which was a very small room. The only furniture in there was a hospital bed, a tiny table and one chair and there were four black cats walking around. The walls had been covered with newspaper articles, posters and signs. The one that caught my eye said, “You are looking at a high performance woman, I can go from zero to Witch in 2.1 seconds.” ...All the books were like The Complete Witches Bible, Tarot Card Reading, The Complete Book of Witchcraft, newspaper articles about witches. I was not afraid that she was a witch and her coven membership certificate was on the wall. But the types of things that she had on the wall were militant. Like...defensive...like court rules such and such about this case about a witch. People who have that culture usually... they just go about their business, and it’s not about putting it out there for everybody to see. So, I didn't know how it was going to get.

Because she felt threatened by the caregiver’s openness about being a witch, another staff member accompanied the OT at the next intervention visit. The OT then began to feel more comfortable about treating the caregiver, and the intervention proceeded smoothly. After the caregiver had to discontinue participation in the ESP, the OT reflected upon her experience:

That was a situation where I didn't feel safe. If I had met (the caregiver) in a coffee shop the first visit, I never would have found out she was a witch... It was a whole different thing, seeing her in her environment. She had some different habits; the candles, the black cats. I didn't get a chance to work with her, I only had two visits, and the man died. It would have been a very interesting case. It would have been an adventure. But you know, it was a challenge for me. I think I grew from that, because I was able to look beyond it.

**Conflict and Congruence between OTs, Caregivers, and Environmental Strategies**

Both conflict and congruence were observed between the OTs, caregivers, and the environmental strategies they chose—even when the OTs’ and caregivers’ values appeared very compatible. The key issue in these instances appeared to revolve around specific aspects of the OTs’ and caregivers’ explanatory models (46). Explanatory models encompass not only beliefs about illness but also include beliefs about the most appropriate treatment for particular problems (46, italics added). It was in this respect that OT’s and caregivers differed markedly: What were the
best strategies for managing specific caregiving challenges? The differences in the OTs’ and caregivers’ explanatory models were inferred from statements they made during observations of the intervention and from the OTs’ descriptions of treatment sessions during interviews and debriefings. Overall, the primary conflict that OTs discussed was that caregivers’ explanatory models about treatment they considered appropriate for managing caregiving challenges were inconsistent with formal medical knowledge of dementia. An OTs’ intervention with a caregiver whose aunt had severe dementia illustrates this type of conflict. The caregiver’s aunt displayed behavior problems that included incontinence, wandering, and taking the caregiver’s personal possessions. The OT was frustrated because the caregiver did not seem to understand her aunt's problem behaviors or use “appropriate” strategies (i.e., reflective of medically-based explanatory models) to deal with them:

According to the caregiver, her aunt has Parkinson's and arthritis and when I mentioned, “Has she been diagnosed with Alzheimer's,” she said, “No, she’s smarter than me” and would give me examples of how smart her aunt was. So right then and there I didn't feel like the caregiver was acknowledging that there was a dementia…I feel like I am starting from scratch as far as education on dementia and dementia related behaviors. She… is constantly giving me examples as to how smart her aunt is. She knows everything (her aunt does) is for spite.

The caregiver’s explanation that her aunt did everything for spite was consistent with the punitive strategies the caregiver developed for handling her aunt’s problem behaviors. For example, one strategy she used to prevent incontinence was to take her aunt to the bathroom every 10 minutes. However, this strategy conflicted with the OT’s beliefs about what treatment was best (the OT’s explanatory model). The OT thought the caregiver’s belief that her aunt’s incontinence was a voluntary and aggressive act reflected lack of knowledge about dementia. At a debriefing meeting, the OT described her attempts to point out ineffectiveness of the caregiver’s taking her aunt to the bathroom every 10 minutes:
(I told her) it has nothing to do with her being smart…it has nothing to do with her intelligence level. (But) every time I try to interject that kind of information to her,(by saying things like),"she is not able to tell you when she has to go to the bathroom That is part of the condition, which is part of the Parkinson's or the dementia," (the caregiver) is not hearing it. Then the next sentence (the caregiver) is … giving me examples of how she thinks her aunt is just spiteful.

The OT also felt that the caregiver used inappropriate communication strategies, based on the beliefs behind the strategies used to manage incontinence and other behaviors the caregiver found undesirable. However, after several months of working with this caregiver, the OT resolved the stuck point between herself and the caregiver that resulted from their differing views about which strategies were best for managing the care receiver. The OT observed that “It's hard for people to look at more of the strategies that are based on change of your behavior and the way you speak and such and how that impacts on the care receiver’s behavior.” To refocus on care that fitted within the family situation, the OT changed her style of interaction, by focusing less on educating the caregiver about dementia and “better ways of handling problems.” Instead, she began using the caregiver’s own strategies and building upon them. She stated:

If (the caregiver) said the words, was very positive, reassuring, thanking her aunt for something she did positive, I would highlight that. "That was great, the way you said that. Look at your aunt, she's smiling."

Significant agreement (congruence) between OTs and caregivers as to which strategies they believed were best for addressing caregiving issues also occurred. For example, G.N., a registered nurse, was the sole caregiver for her mother, a 91-year-old with severe dementia who conversed primarily in Italian. She continually followed G.N., interfering with household tasks and preventing G.N. from having any time for herself.

G.N. appeared to view the causes and pathology of dementia as the OT did, and had similar ideas about managing her mother’s problem behaviors and decreasing her own stress level. The OT described G.N.’s medical know-how as "an advantage" and reported that because
of this, it was much easier to work with her. Together, G.N. and the OT decided that the best way to ensure that G.N. had time for herself was to find an activity that her mother would find meaningful at some level, despite severe dementia. They built upon one of her mother’s valued interests, her Catholic religious practices, and designed workable strategies. The OT obtained an audiotape of the Rosary in Italian so that G.N.’s mother could listen to and recite at least some of the words the prayer, along with the tape. This occupied G.N.’s mother for about 20 minutes at a time, enabling G.N. to take a shower or complete a household task.

Conflict between OTs, Caregivers, and Division of Labor

The way that tasks were distributed in the intervention (division of labor) was directed by the collaborative, client-centered approach in which the OTs were trained as part of the ESP protocol. The OT and caregiver collaborated to develop specific intervention strategies, with the caregiver acting as a lay practitioner. However, OT’s frequently encountered caregivers who felt very overwhelmed. These caregivers had difficulty actively collaborating with the OT, because they doubted their ability to handle the caregiving situation. This created challenges for the OTs, because they were trying to enhance caregivers’ ability to manage their caregiving roles and facilitate independent problem solving. The OTs worked through this conflict or stuck point, by using conceptual tools related to the art of practice, in order to enact a collaborative approach. These tools have been described in more detail elsewhere (47) and include building rapport; finding unique environmental strategies that enable caregivers to fully adopt the intervention (named “hooks” or “ways in”); developing and fitting environmental strategies to the unique caregiving situation; and helping caregivers to develop or refine their problem solving skills (47).

The following case story (J.B.) is used to summarize the process by which an overwhelmed caregiver began to actively engage in the intervention and to adapt his home
environment to improve his caregiving situation. J.B.’s wife was in the moderate stage of dementia and displayed wandering and rummaging behaviors. J.B. was considering nursing home placement for Mrs. B at the time of the initial intervention visits, because he was overwhelmed with caregiving and dealing with his own physical illnesses. The OT found it “very challenging” to work with J.B., because she felt he was not open to collaboration and that his ability to participate in the ESP was limited by depression and feelings of being overwhelmed. Indeed, J.B. reported he was “wrapped up in a dream in many respects.”

Over the course of several visits, the OT realized that her initial approach was incompatible with J.B.’s needs and was interfering with intervention because she “came on too strong” when she attempted to detail the entire range of benefits afforded by the ESP. After putting her own agenda “on hold,” the OT introduced a catalog of adaptive equipment and let J.B. take the lead. J.B displayed strong interest in an adapted commode. J.B.’s interest in the commode and subsequent discussion and collaboration about ways to better help his wife appeared to open up communication between himself and the OT. Subsequently, J.B. discussed and adopted other strategies such as “stop signs” to keep his wife away from unsafe areas of the home and ways to limit her rummaging behavior. He gradually started to create and implement his own strategies, such as having his wife sleep in a reclining chair (she was uncomfortable in a regular bed). He also considered obtaining locks for cabinets in which his wife rummaged, using the “out of sight, out of mind” principle that the OT introduced.

The OT described J.B.’s treatment and her shift in approach as a process of empowering and validating his role as a caregiver. In turn, J.B. responded by gradually adopting the “expert” role and moving beyond feelings of being powerless and overwhelmed. The OT summarized her resolution of the conflict as follows:
I was too eager…initially. And he couldn't handle it all. So it really forced me to do a lot of self-reflection and back up. What can I do to cool out a little bit? (How can I) Change my way, even my mannerisms and way of speaking with him. Slow down, not speak with so much enthusiasm or excitement, because he's not coming from that. He's really hurting. And the bubbly therapist doesn't really help. So I needed to change … and slow down my approach. Give him more time and listen to him, even if sometimes that was very difficult.

**Congruence Between Research Protocols and OT Approaches**

Marked congruence existed between the research protocols governing the intervention (part of the “rules” of the activity system), and the conceptual tools and environmental strategies that the OTs used. The OTs’ approach to caregivers, which as previously noted included building rapport, finding a “way in” that enabled the caregiver to adopt the intervention, fitting the intervention to the family, and facilitating caregivers’ problem-solving skills, appeared to work with the rules in a synchronous fashion.

This facilitated the conceptual tool of *building rapport* and lead to developing strategies that would assist the caregiver. It also provided an opening for *finding the “hook” or “way in,”* an intervention that the caregiver needed, that was congruent with the family situation, and that the caregiver felt (s)he was capable of implementing (47).

The story of N.K., a caregiver who did not want to openly acknowledge his wife’s dementia, provides an example of the congruence between research protocols and conceptual tools of the OT. The OT asked open-ended questions to elicit N.K. ’s understanding of dementia and discovered he did not want to discuss anything directly related to dementia while his wife was present. The OT then built rapport by demonstrating to N.K. that she understood and respected his wishes. She never discussed dementia in his wife’s presence, and she explained the purpose of the ESP to his wife as “helping older people in the community” instead of helping caregivers of persons with dementia. As a result, N.K. felt comfortable providing information to
the OT. He and the OT also collaborated with his daughter, as a secondary caregiver. Together, they developed the new strategy of looking at his caregiving role as a job, which turned out to be an effective way for him to manage the stress and burden associated with caregiving.

**Discussion**

This study revealed sources of conflict and congruence in critical areas of practice with caregivers of persons with dementia. In particular, the findings highlighted the OT’s therapeutic relationships with caregivers and problems that arose from disagreements between OT’s and caregivers with respect to the environmental strategies (tools of practice) that they thought best for addressing caregiving problems. The findings also revealed hidden influences on practice including caregiver expectations about their roles as collaborators in the ESP. Examining participants’ clinical reasoning as an activity system revealed the ways that therapists used physical and conceptual tools in relation to rules, negotiated relationships with caregivers, and accomplished the object of intervention. Going beyond the more typical focus on individual reasoning processes, this study thus provided an additional perspective from which to explore the territory of clinical reasoning as co-constructed by therapists and families.

The OTs work in ESP may be viewed as creation of *expansive learning cycles* (33), in which the OTs and caregivers responded to conflicts in the therapeutic process by examining, implementing and evaluating new ways of working with each other. This process was shared between OTs and caregivers at the outset, with caregivers participating to the extent they could. Throughout the process, caregivers’ own resources, priorities, and ideas for intervention occupied center stage. In cultural-historical activity theory terms, the OTs and caregivers appropriated each others’ ideas and co-constructed intervention.
Prevailing views of clinical reasoning that focus on types of reasoning do not appear adequate to encompass the client’s contributions to and co-construction of therapy. Mattingly (48) and Mattingly and Fleming (1) attempt to fill this void using an additional mental process, narrative reasoning. Therapists use narrative reasoning when trying to understand persons’ illness experiences and when structuring intervention (1, 48). These authors report that in the latter, therapists “envisioned a possible and desirable future for the patient and imagined how they might guide treatment to bring such a story about” (48, p. 101).

Both the view of the therapist with the “three track mind” and the idea of narrative reasoning incorporate the notion of other persons (patients/clients, caregivers) interacting and sharing their illness experiences and stories with the therapist. This process is thought to set up conditions to make collaboration possible as the OT gains a sense of the meaning of these experiences and stories. As Mattingly and Fleming (1, pp. 179—180) state:

..the cooperative nature of the practice compels (OTs) to acknowledge the patient’s meaning world at some level, simply to induce the patient to take the therapy seriously. This clinical reasoning in practice means reasoning, not only about what is wrong and how to fit it, but also about how to engage the patient in that fixing process. This, in turn, involves understanding enough about the meaning of the disability from the patient’s perspective to develop a shared account of what “fixing” the problem could mean in terms of their lives.

This excerpt clearly emphasizes the importance of understanding and incorporating clients’ perspectives. However, the overall process of initiating and developing this collaboration appears to rest on the therapist. Moreover, the primary focus when it comes to the psychological resources for solving problems emphasizes the therapist’s role in the process. In contrast, cultural-historical activity theory incorporates the notion of appropriation, a process in which the individual is drawn into social practices and simultaneously, develops new ways of thinking (49). Appropriation is inherently a mutual process. Thus, when applied to clinical reasoning,
therapist-client collaboration “goes both directions”—from the person receiving OT to the therapist and vice versa. In the present study, the caregivers were drawn into the societal practices of the OT’s, who had expert clinical knowledge about adapting home environments. At the same time, the OT’s were drawn into the customary practices of the caregivers as they learned about the caregivers’ values and explanatory models. Neither the OT nor caregiver had complete knowledge to “transmit” to the other but instead, appropriated knowledge from each other in order to participate fully in creating the intervention. The concept of appropriation thus provides a way of looking at clinical reasoning that more fully incorporates the OT and caregiver as partners in creating and customizing intervention, with mutual construction of intervention “built in” to the interactions between OT and caregiver. This may help to further reveal what goes into the collaboration process between OT’s and their clients and caregivers by identifying hidden influences on practice. Incorporating the shared activity that makes up OT intervention also may help to redirect the current focus on developing additional “types of reasoning” to a more holistic view of clinical reasoning in context. This may, in turn, diminish confusion related to the proliferation of so many different types of reasoning.

A major limitation of this study was that it did not include interviews with the caregivers that the OTs treated. A deeper understanding of the activity system would have been gained if the caregivers shared their perspectives. This would have incorporated diverse points of view into the analysis by studying at least two activity systems in tandem and further revealed dynamic interactions between them (50). Future studies that more fully incorporate the caregiver or client and the OT within the dynamic interplay of their respective activity systems may reveal greater detail about important areas of conflict and congruence. Such analyses also may provide additional tools for reflection on practice. In particular, therapists and students may find it useful
to examine particular treatment sessions as activity systems to identify or clarify specific sources of congruence or conflict. Other studies might examine different OT practice contexts, to explore the many ways in which conceptual and physical tools of practice influence clinical reasoning. The effects of rules constraining practice in different settings, such as treatment protocols and insurance reimbursement, also could offer other useful analyses. Further, in-depth analysis of the specific ways in which therapists and clients co-construct interventions in different practice settings could provide new insights into therapist-client interactions.

It is important to note that analysis of clinical reasoning by examining congruence and conflict between aspects of activity systems in OT intervention, as in analyses of teacher-student interactions studied by Yamagata-Lynch (33), does not provide a generalizable picture of clinical reasoning. Nevertheless, findings from the present study suggest that activity system analysis may provide additional reflective tools for practice and an alternate perspective on clinical reasoning that can lead to future avenues of research. A strong advantage of the theory for analyzing clinical reasoning is that it enables practitioners and researchers to identify specific dimensions of practice contexts, so their influence on practice may be more clearly illuminated. This is important because, although context is often implicitly viewed as a uniform concept, its specific aspects are not clearly delineated nor agreed upon (51). Moreover, therapists will be unable to identify the most appropriate issue(s) to address if they unaware of how context influences intervention. Using an activity system framework may enable OT’s to better understand the dynamic forces that influence the co-construction of intervention and build more effective partnerships with their clients/caregivers.
Acknowledgements

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# Table I. Activity System Elements and Application to the Environmental Skill Building Program

<table>
<thead>
<tr>
<th>Activity System Element</th>
<th>Specific Application to the Study’s Environmental Skill Building Program</th>
<th>Types of Information Generated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subject—Person whose viewpoint is being studied when analyzing a specific context. For example when analyzing practice, the viewpoints of the therapist, client/caregiver, and/or administrator could be examined.</td>
<td>Therapists who served as interventionists in the environmental skill building program, whose clinical reasoning was the focus of the study.</td>
<td>Therapists’ values and beliefs; sources of possible conflict with other elements in the activity system, such as between therapists and caregivers (<em>community</em>) and between therapists and the aim of intervention (<em>problem space</em>).</td>
</tr>
<tr>
<td>Object—Problem space or area of concern at which the activity is directed</td>
<td>Intervention focus of the environmental skill building program, which was to enhance quality of life and occupational performance of the caregiver and care receiver using a collaborative approach.</td>
<td>Main aim(s) of intervention and its congruence or conflict with other activity system elements, such as the conflict between therapists and the intervention focus.</td>
</tr>
<tr>
<td><strong>Tools</strong> – Ways through</td>
<td>Environmental strategies, ways of modifying the caregiver’s home environment and ways of working with the caregiver.</td>
<td>Specific ways in which therapists carried out the work of the environmental skill-building program; sources of possible conflicts between tools of practice and other activity system elements.</td>
</tr>
<tr>
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<td>-----------------------------------------------------------------</td>
<td>-----------------------------------------------------------------</td>
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<tr>
<td>which the area of concern is transformed into specific outcomes. These can be any conceptual or physical “tools of practice” used in OT.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Community</strong> – People who share the same problem space (for clinical reasoning, it is those involved in the OT intervention).</td>
<td>Caregivers, other family members, and other environmental skill building staff</td>
<td>Values and beliefs; specific caregiving situation and individual factors influencing care; sources of possible conflict between other people in the activity system and the therapists.</td>
</tr>
<tr>
<td><strong>Division of Labor</strong> – Ways in which tasks are distributed in the intervention</td>
<td>Caregiver viewed as expert, therapist is technical consultant.</td>
<td>Expectations of therapists and caregivers as to “who does what;” distribution of tasks within the home environment.</td>
</tr>
<tr>
<td><strong>Rules</strong> – Regulations and norms that constrain and enable interactions in the activity system</td>
<td>Environmental skill building protocols guiding intervention, expectations of caregivers and therapists</td>
<td>Guidelines on specific approach to caregivers, strategies recommended for particular environmental challenges (e.g., incontinence).</td>
</tr>
</tbody>
</table>
Table II. Data Collection and Analysis Summary

<table>
<thead>
<tr>
<th>Data Collection Method</th>
<th>Data Analysis Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Contact Summaries</td>
</tr>
<tr>
<td>1. Observation</td>
<td></td>
</tr>
<tr>
<td>Debriefings</td>
<td>X</td>
</tr>
<tr>
<td>Intervention Sessions</td>
<td>X</td>
</tr>
<tr>
<td>2. Document review</td>
<td></td>
</tr>
<tr>
<td>3. Field notes</td>
<td></td>
</tr>
<tr>
<td>4. Interviews</td>
<td>X</td>
</tr>
</tbody>
</table>
### Table III. Example of Chart Showing Conflict and Congruence During Observation of ESP Session

<table>
<thead>
<tr>
<th>Activity System Element</th>
<th>Specific Activity System Application, Obs. #1</th>
<th>Key Conflicts &amp; Congruence, Obs. #1</th>
<th>Specific Activity System Application, Obs. #2</th>
<th>Key Conflicts &amp; Congruence, Obs. #2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Subjects</strong></td>
<td>OT#3</td>
<td>• Conflict between OT and CG as to what tools are best for managing care of wife with dementia. OT suggested ways to modify daily activity, which caregiver rejected/ • Caregiver appeared to expect OT to bring additional materials on this date. • OT and caregiver agree that caregiver health is important area of focus • Caregiver appears to have conflicts about how he enact caregiver role (rules and community)</td>
<td>OT#3</td>
<td>• Initially there seemed to be conflict between the OT and caregiver’s expectations of how the intervention should be focused and what tools should be used (i.e., cognitively based strategies like directing family members—“just talking”—vs. more concrete forms of help like providing adaptive equipment) • OT and caregiver reached agreement about appropriate tools for intervention, when problem solving about the commode</td>
</tr>
<tr>
<td><strong>Object</strong></td>
<td>Develop strategies to address problems in daily life with person who has dementia</td>
<td>How to address burdensome aspects of caregiving and enable caregiver to maintain his health</td>
<td>How to address burdensome aspects of caregiving and enable caregiver to maintain his health</td>
<td></td>
</tr>
<tr>
<td><strong>Tools</strong></td>
<td>Ways through which the area of concern is transformed into specific outcomes</td>
<td>• Therapeutic use of self, especially verbal communication • Adapted COPM • Suggestions for modifying CG and CR daily activities • OT to provide resources on stress management next session</td>
<td>Therapeutic use of self, especially verbal and nonverbal communication</td>
<td></td>
</tr>
</tbody>
</table>
Table III. (Continued) Example of Chart Showing Conflict and Congruence During Observation of ESP Session

<table>
<thead>
<tr>
<th>Activity System Element</th>
<th>Specific Activity System Application, Obs. #1</th>
<th>Key Conflicts &amp; Congruence, Obs. #1</th>
<th>Specific Activity System Application, Obs. #2</th>
<th>Key Conflicts &amp; Congruence, Obs. #2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community</td>
<td>Caregiver, care receiver, home health aide.</td>
<td>• Conflict between OT and CG as to what tools are best for managing care of wife with dementia. OT suggested ways to modify daily activity, which caregiver rejects. • Caregiver appeared to expect OT to bring additional materials on this date. • OT and caregiver agree that caregiver health is important area of focus. • Caregiver appears to have conflicts about how he enact caregiver role (rules and community).</td>
<td>Caregiver, care receiver, home health aide.</td>
<td>• Initially there seemed to be conflict between the OT and caregiver’s expectations of how the intervention should be focused and what tools should be used (i.e., cognitively based strategies like directing family members—“just talking” – vs. more concrete forms of help like providing adaptive equipment). • OT and caregiver reached agreement about appropriate tools for intervention, when problem solving about the commode.</td>
</tr>
<tr>
<td>Division of Labor</td>
<td>OT and caregiver shared power; but OT did most of the talking. Caregiver took a more active role as the session progressed.</td>
<td></td>
<td>OT and caregiver shared power, caregiver took very active role in directing the intervention.</td>
<td></td>
</tr>
<tr>
<td>Rules</td>
<td>Caregiver indicated he is struggling with this own and others’ beliefs about how he ought to fulfill role as caregiver. CG appeared to expect OT to bring additional materials today.</td>
<td></td>
<td>Caregiver seemed overwhelmed with conflict about how to handle the situation taking care of his wife. His expectations of what his daily life and routine should be seem severely challenged.</td>
<td></td>
</tr>
</tbody>
</table>