

Occupational Analysis and Synthesis

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Abstract

The processes of occupational analysis and synthesis have been essential to the profession of occupational therapy since its founding. In this paper, the Conceptual Framework for Therapeutic Occupation (CFTO) is advocated as providing logical and practical guidelines for occupational analysis/synthesis. When learning to think like an occupational therapist, the student first analyzes occupations observed outside the therapeutic context. Next the student learns how to synthesize potentially therapeutic occupational forms. The culmination of occupational therapy education (also the essential act of an experienced therapist) is analysis/synthesis of occupational forms in accordance with one of the evidence-based models of practice. CFTO is compatible with all the occupational therapy models of practice (often called frames of reference). In this paper, two examples of occupational analysis and synthesis are given. In the first, a man with Parkinson's disease attends a church service. In the second, abbreviated example, a man with HIV/AIDS sets up his new apartment after living dependently in a nursing facility. Whether or not the Conceptual Framework for Therapeutic Occupation or some other system is used, occupational analysis/synthesis is the essential and defining occupation of the occupational therapist.

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Occupational Analysis and Synthesis

The reason for the founding of the profession was the use of occupation to enhance human lives (National Society for the Promotion of Occupational Therapy, 1917; Meyer, 1922). Please see a discussion of the history of therapeutic occupation in the 1996 Eleanor Clarke Slagle lecture (Nelson, 1997). Our profession's focus on occupation as a method of therapy is what makes the profession unique and valuable to society.

One of the profession's founders, Eleanor Clarke Slagle (1922), wrote about her «system of occupational analysis» (p. 16). As the widely recognized leader of early occupational therapy education, Slagle ensured that skill in occupational analysis was central to every student's education. Slagle did not provide an abstract definition of occupational analysis and its components. However, from the examples she provided, it is clear that occupational analysis involved a match between:

- a) the basic characteristics of work tasks, crafts, games, self-care tasks, etc., and
- b) the capabilities of the person.

In this article, the parallel idea is that occupational analysis includes a match between:

- a) an occupational form and
- b) the person's developmental structure (for definitions please see Table 1 on next page).

The definitions in Table 1 are taken from the Conceptual Framework of Therapeutic Occupation (CFTO). For extensive explanations of all CFTO concepts and their relationships with models of practice, please see Nelson (1988), Nelson (1994), Nelson

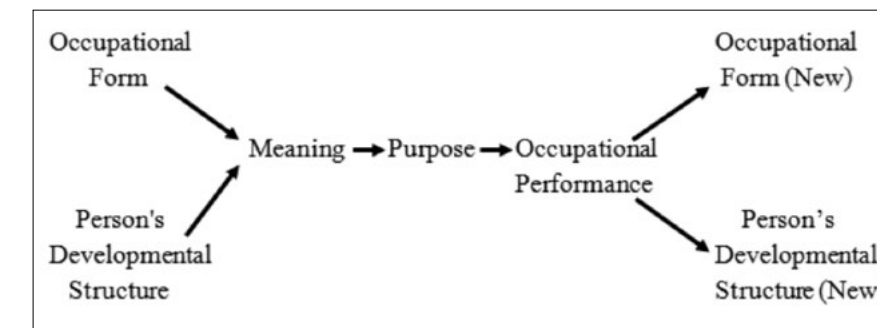


Figure 1. Occupation is dynamic. The arrow from Occupational Performance to Occupational Form (New) is Impact. The lower arrow from Occupational Performance to the Person's Developmental Structure (New) is Self-Adaptation.

(1996), and Nelson and Thomas (2003). The only change in CFTO terminology from prior publications is that now the term self-adaptation is used instead of simply adaptation. The reason is that occupational therapists persist in using the term adaptation for two entirely different concepts:

- a) the change in the person (self-adaptation) and
- b) the synthesis of compensatory occupational forms (e.g., adaptations of the environment) (Nelson, 2006).

Please see Figure 1. An occupation starts when a person with a unique developmental structure encounters an occupational form. When that encounter takes place, the person experiences meaning. In other words, the person makes some kind of subjective sense out of the occupational form. Meaning involves both:

- a) perception (or misperception) of the physical aspects of the occupational form, and
- b) the symbolic understanding (or misunderstanding) of the sociocultural aspects of the occupational form.

Meaning also involves the subjective, affective experience of the

person encountering the occupational form.

Once the person has meanings, the person subjectively develops purposes, desired outcomes associated with thought and emotion. Then the person actively does something in pursuit of those purposes: occupational performance. Occupational performance affects both subsequent occupational forms (impact) and the person's own developmental structure (self-adaptation). Figure 1 is a graphic portrayal of the basic process.

The term «synthesis» was first used by Mosey (1986) to describe the joining together of various activity features into a coherent, appropriate whole to be presented to the person receiving therapy. However, long before Mosey suggested this concept label, the idea behind the word synthesis was foundational to the profession. In occupational synthesis, the therapist collaborates with the person to design a therapeutic occupational form. The therapist synthesizes an occupational form to make a just-right match to a person's developmental structure, so that the person can find meaning and purpose, leading to active doing (occupational performance) and a therapeutic goal.

Occupation	Occupation is a dynamic relationship among an occupational form, a person with a unique developmental structure, subjective meanings and purposes, and a resulting occupational performance.
Occupational Form	Occupational form is the objective set of physical and sociocultural circumstances, external to the person, at a particular time. The occupational form guides, structures, or suggests what is to be done by the person.
Person's Developmental Structure	A person's developmental structure consists of sensorimotor, cognitive, and psychosocial abilities and characteristics. The term «developmental» implies that the structure is the end product of a long-term process influenced both by maturation (genetically unfolding physical changes) and by past occupational adaptations (personal experiences).
Meaning	Meaning is the entire interpretive experience engaged in by an individual encountering an occupational form. Meaning involves perceptual interpretation, symbolic interpretation, and affect.
Purpose	Purpose is the felt experience of desiring an outcome (having a motive). When a person with a unique developmental structure interprets the occupational form (meaning), he or she often wants to do something about it (purpose).
Occupational Performance	Occupational performance is the voluntary doing of the person in the context of the occupational form.
Impact	Impact is the effect of occupational performance on the person's subsequent occupational form and on the occupational forms of others.
Self-Adaptation	Self-Adaptation is the effect of occupational performance on the person's developmental structure. In therapy, self-adaptation may occur when the person actively engages with a synthesized occupational form.
Occupational Compensation as Therapy	Occupational compensation as therapy involves four elements: a developmental structure characterized by an intractable problem and latent capacities, synthesis of a somewhat atypical occupational form, substitute occupational performance, and comparable impact.
Occupational Assessment	Occupational assessment involves (a) the therapist's direct and indirect (reported) observation of a person's occupational performances and impacts in the context of synthesized occupational forms, and (b) the drawing of inferences about the person's developmental structure and/or occupational configurations.

Table 1. Basic definitions in the Conceptual Framework for Therapeutic Occupation.

(self-adaptation or successful compensation).
In the early phases of occupational therapy education, today as well as in Slagle's era, a student should first learn how to analyze naturally occurring occupations performed outside the occupational therapy context. In this phase, there are no therapeutic syntheses or goals set by the occupational therapist. Ultimately, the student's remembered analyses of naturalistic occupations in all their variety and complexity will constitute a «toolbox» for future work in therapy. Soon the student can begin to learn about the special responsibilities of the therapist in collaborating with the person in

synthesizing a therapeutic occupational form.
The student can learn the basic process of occupational analysis and synthesis even before learning occupational therapy models of practice (sometimes called frames of reference). By the time of graduation, the student has learned how to apply models of practice when describing the person's developmental structure and therapeutic goals. Examples of the many occupational therapy models of practice include the Model of Human Occupation (Kielhofner, 2006), Sensory Integration (Ayres, 1972), and Multicontext Generalization (Togliola, 1991). Each model of practice

uses unique terms to describe the developmental structure and the process of therapeutic change. Any uniform terminology is valuable only for the early phases of occupational therapy study before the student learns about the various models of practice.
The Conceptual Framework of Therapeutic Occupation (CFTO) is compatible with all occupational therapy models of practice. Newly learned concepts from models of practice are simply plugged into the CFTO framework.
Occupational analysis of naturally occurring occupations outside of a therapeutic context can be defined as a three-step process of documenting:

Dimensions of Occupational Form (All External to the Person)			
Physical Dimensions		Sociocultural Dimensions	
Shapes Sizes Distances Relative Positions Weights Textures Colors Lighting Sounds Physical presence of others etc.	Temporal aspects: (the moment-by-moment changes in all physical factors)	Symbols Norms Sanctions Roles Typical uses Typical variations Language rules etc.	Social levels: Universal Cultural Subcultural National Regional/Community Institutional Organizational Neighborhood Family Other groups

Table 2. Dimensions of occupational form.

1. the occupational form and any background information available about the person;
2. the person's occupational performance and impact as well as meanings and purposes that can be inferred from the observation; and
3. self-adaptations and impacts made by the person.

Therapeutic occupational analysis/synthesis can be defined as a five-step process of documenting:

1. the developmental structure (as evaluated) and the planned occupational form;
2. the predicted occupation, including predicted meanings, purposes, occupational performance, impact, self-adaptations, compensations, progress toward therapeutic goals, and new assessment information gained;
3. the actual occupational form and the actual occupation, including the actual occupational performance and impact as well as inferred meanings and purposes;
4. self-adaptations and compensations, including progress toward goals, and new assessment information; and

5. synthesis (re-synthesis) of future occupational forms.

This article will focus on the relatively complex process of professional, therapeutic occupational analysis and synthesis, which includes and surpasses all the steps taken in analyzing naturally occurring occupations. An occupational analysis/synthesis from a case study will be used here as the primary example. Chapman and Nelson (2014) described occupational therapy for a man with Parkinson's disease. In this case study, the Role Acquisition model of practice (Mosey, 1986, Chap. 26) was used in combination with the Conceptual Framework for Therapeutic Occupation.

1. EVALUATED DEVELOPMENTAL STRUCTURE AND PLANNED OCCUPATIONAL FORM

This 78-year-old man with idiopathic Parkinson's disease lived at home with his wife. He reported a vigorous, rich lifestyle of work and leisure in the past, but stated that his Parkinson's disease had forced him to abandon almost all of the many occupations he had regularly performed outside the home. Assessments revealed bilateral

bradykinesia; tremors; flexed and asymmetric posture; rigidity with impairments of range of motion in the spine, hips, and ankles; shuffling gait with occasional freezing; hypophonic speech associated with reduced expansion of the rib cage; mild cognitive impairment; depression; a restricted lifestyle; and a self-reported history of about one fall per month in addition to near-falls. In Mosey's Role Acquisition model, the therapist is mainly a teacher of roles, tasks, and skills. As a learner, this man needed unambiguous instructions, frequent demonstration, actual practice in simulated and naturalistic occupational forms, and supportive feedback focusing more on his successes than failures. For more information, please see Chapman and Nelson (2014).
The Role Acquisition model posits that the person is especially likely to learn an occupation if he or she has a special interest. This man's most highly rated goal was to continue to attend his church service with his wife each Sunday morning. The planned occupational form can be labeled «church attendance.» Please see Table 2 describing the possible physical and sociocultural dimen-

sions of an occupational form. Except for the occasional student paper, all the dimensions of an occupational form are rarely documented. One of the most difficult tasks for a student is to identify the most relevant dimensions of a particular occupational form, while choosing not to record less important or irrelevant details. For example, in this case certain rituals of the church service were highly relevant whereas the exact etymologies of the words spoken by fellow parishioners were much less relevant, even though technically part of the occupational form. For a physical example, anything obstructing balance and gait were highly relevant, but the colors within the church were not so relevant (even though in a different occupation, the colors of the priest's vestments might be highly relevant).

Socioculturally, the occupational form of church attendance involved a life-long affiliation with Roman Catholicism. Indeed, he had been baptized as an infant in this same church. All religions have powerful symbols and norms; for example, this man's religion placed special importance on the taking of communion. In the church service, different people have defined roles, whether the priest, those assisting the priest, the choir, or members of the congregation. As a member of the congregation, the man was expected (if possible) to recite prayers and sing hymns in defined temporal sequences and pitches. The parish was also a social center for fellowship. His wife typically accompanied him to church, and, except for medical appointments, going to church together was their sole remaining reciprocal occupation outside the home. The plan

of the therapist was to blend into the social situation while providing minimally necessary, discreet cues and supports.

Physical aspects of the occupational form included the route from handicapped parking to the church pew; the pew kneeler and seat; books of hymns and liturgy; the route from the pew down the aisle to the communion area; the church vestibule where standing was the norm (typically the site for fellowship before and after the formal service); and the physical presence of fellow parishioners, some of whom were likely to address the man. Physical assistance by the therapist was not planned but was possible given challenges in the actual occupational form.

To prepare for the occupation, the therapist engaged the man in a series of preliminary therapeutic occupations (each of which had form, meaning, purpose, performance, and self-adaptation in its own right). The preliminary series emphasized high-amplitude movements and addressed static and dynamic standing balance; sustained safe walking; increased chest expansion to improve vocalization; transitions from kneeling to standing to sitting; dressing in his suit, tie and overcoat; car transfer; seatbelt fastening (a particular problem because of his inability to dissociate his upper trunk from his lower trunk); and backing his car out of his driveway (again, a problem due to a lack of trunk and neck rotation).

2. PREDICTED OCCUPATION

When synthesizing an occupational form, the therapist makes predictions as to the meanings, purposes, performances, impacts, adaptations, and compensations

expected to occur in the occupation. For this occupation, the therapist predicted very high levels of meaning and purpose. The man had listed church attendance as his most important occupation. Another indication of a high level of meaning was that he spent hours readying his clothes and car for this weekly outing.

The rituals of the church service are designed to foster a spiritual experience, especially in a man professing a life-long commitment. For someone with a recent history of depression and increasing apathy, the church service provided an opportunity for meaningful engagement cognitively, socially, emotionally, and spiritually. Socialization before and after the service involved emotionally charged, long-term relationships, some of which were life-long. Church attendance also involved emotions evoked by spending time with his wife. He described the occupation as «taking my wife to church.»

The therapist predicted that one of his purposes would be recognition as a cherished member of the congregation. He also seemed to want to reassure himself and his wife that he could still go out and do things that were important to both of them.

The therapist's concerns focused on the man's perceptual meanings. Given his balance impairment and history of falls, the therapist was particularly concerned about his somatosensory self-monitoring. Fatigue was predicted, particularly after the formal service while standing and conversing in the vestibule. Interactions in a small crowd and inadvertent jostling could lead to a fall.

Predicted performances and impacts included successful

passage from car to vestibule to pew to communion area to pew to vestibule and back to car. Because of anticipated fatigue, the man's posture and gait might decline in quality toward the end of the occupation, with increased shuffling and forward flexion. Reciprocal engagement in conversation, recitation of prayers, and consumption of the communion host were expected. The therapist anticipated that the man might have difficulty in breath support for vocalizations, especially while singing hymns.

This planned occupation was oriented to therapeutic goals of self-adaptation, not compensation. It should be noted that compensation took place in other therapeutic occupations at other times with this man, mostly via assistive devices for self care and home modifications. In this occupation, anticipated adaptations directly related to the therapist's goals included increased self-efficacy in church attendance, reinforcement of safe mobility, generalization of breathing strategies to new situations, enhanced mood and affect, and maintenance of a highly valued occupation in his configuration. When a person maintains an ability that would otherwise be lost, CFTO classifies this type of maintenance as self-adaptation.

3. ACTUAL OCCUPATIONAL FORM AND OCCUPATION

Frequently the actual occupational form is somewhat different from what was planned. In this case, a handicapped parking sign provided an over-challenge to the man's visual-perceptual meaning. The sign was placed between two parking spots, and the man parked in the middle of the two

parking spaces, directly behind the sign.

A second unanticipated challenge was that the incline of the ramp from the parking lot was steep with no railing, so the therapist provided standby assistance. A third problem was that the door to the church was too heavy for him to open without loss of balance, so the therapist opened the door. Finally, the therapist discovered that there were two, shallow, wide-tread marble stairs, without railings, to the communion area. Therefore the therapist provided minimal contact guard while rising and descending those steps.

Other aspects of the occupation unfolded mainly as planned. He participated in the ritual of making the sign of the cross with holy water, but, as anticipated, he did not attempt to genuflect prior to entering the pew. He participated in both ritualistic responses and hymns without reference to the books, but his voice was softer than others. Before and after the service, fellow parishioners approached the man and initiated friendly conversations. He spoke softly with minimal facial expressions, typical of Parkinson's. However, the focus and movement of his eyes suggested a high degree of interest (a gleam in the eyes). His verbal responses were appropriate, but monotonic and sometimes delayed. He did not initiate conversations.

Toward the end of the post-service socialization, his posture became increasingly forward-flexed, and his shuffling became more pronounced. Later he confirmed that these were indications of fatigue. However, he demonstrated no freezing. He reported a high level of satisfaction with the occupation.

4. SELF-ADAPTATIONS, COMPENSATIONS, AND ASSESSMENT INFORMATION

In this occupation, the therapist's goals for self-adaptation were fully met. The man reported increased self-efficacy for church attendance. His occupational performance reinforced his self-esteem, his identity, and his capacity for enjoyment. There was evidence that he generalized past learning concerning falls prevention, gait, and breathing to the church-going situation. He coped well with fatigue, especially in the latter stages of the occupation. According to Mosey's Role Acquisition model of practice, generalization of learning to new occupational forms is important in the development of habits. Because of this therapeutic occupation, a man with disease-related impoverishment of occupation was increasingly likely to be able to continue to pursue a highly valued occupation.

Assessment is an ongoing process, and the therapist continues to learn new things whenever observing the person engaged in occupation. The therapist learned that the man has long-term memory skills in that he was able recite prayers and hymns; he was also able to remember details about fellow parishioners. The therapist also learned that the man has adapted to declining sensory-motor and cognitive abilities by focusing on only one thing at a time. For example, when walking, he did not engage in potentially distracting conversation.

5. RE-SYNTHESES FOR THE FUTURE

Occupational therapy is a dynamic process, with one therapeutic occupation setting up the next

(as in Figure 1). The main re-syntheses arising from this occupation were recommended changes to the physical aspects of the church. At the therapist's suggestion, church personnel installed:

- a) unambiguous signage for handicapped parking, b) a low-effort, hydraulic, push-button door opener to the vestibule, and
- c) a hand rail on the steps leading to the communion area.

The therapist also continued to synthesize occupational forms in the home that would help him get ready for church safely and efficiently.

The therapist recommended a driving evaluation, given declining skills secondary to Parkinson's disease. The only driving done by the man was weekly church attendance, and it remained important to him. However, the time would come for his wife to drive. Although it will probably be difficult for him to give up this role, a hopeful sign was that he had recently agreed to restrict flying his airplane to a co-pilot status with his son.

A Second, Abbreviated Occupational Analysis and Synthesis

An occupational analysis/synthesis can be more or less detailed than the above example. A student learning to think like an occupational therapist should have experiences both with highly detailed analyses and with abbreviated summaries containing only the most cogent information. Over time, the student learns how to conduct numerous analyses/syntheses mentally and how to document

intervention sessions in a highly efficient manner.

Misko, Nelson, and Duggan (2015) used the Model of Human Occupation (Kielhofner, 2008) in combination with CFTO in case studies of persons with HIV/AIDS. The example below illustrates an occupation taking place discontinuously over several days.

1. EVALUATED DEVELOPMENTAL STRUCTURE AND PLANNED OCCUPATIONAL FORM

A fifty year old man, HIV positive for twelve years, had recently moved into his own apartment after two years living dependently in a nursing home. Because of transverse myelitis and neuropathy, he primarily mobilized in a power wheelchair. His personal narrative included a strong commitment to independent living but also self-doubts concerning personal causation. Most of his possessions remained piled in boxes, and this was in conflict with the value he placed on order and functionality. The initial occupational form could be labeled «Possessions to be unpacked in setting up his apartment.»

2. PREDICTED OCCUPATION

The student therapist predicted problems of volition (doubts concerning personal causation and insufficient knowledge of personal capacity) in the early stages of the occupation. A high level of purpose was expected because he repeatedly stated he needed to get his apartment organized in order to live independently. His mobility, endurance, and problem-solving skills were in danger of being over-challenged, so the student therapist planned to take a hands-on, collaborative ap-

proach in the early stages of the occupation.

3. ACTUAL OCCUPATIONAL FORM AND OCCUPATION

The student therapist's expectations were largely fulfilled. First they collaboratively unpacked and set up his computer station, with numerous adjustments made as he tested and refined the design. The student therapist gave constructive feedback concerning safe mobility while encouraging his autonomy in decision-making. In subsequent days, volunteers from social service agencies assisted the man with most of the physical aspects of unpacking while he made the decisions concerning placement. In other words, he took on the same role with the volunteers that he had worked out collaboratively with the student therapist. His new apartment (impact of his occupation) was an evolving occupational form that appropriately challenged future problem-solving, planning, organization, and time management.

4. SELF-ADAPTATIONS, COMPENSATIONS, AND ASSESSMENT INFORMATION

With initial occupational success, the sense of personal causation increased. The man quickly learned the role (habituation in the Model of Human Occupation) of directing others. Energy conservation in directing others is a compensation for impairments of mobility and endurance. Self-knowledge of his capacities and incapacities was reinforced. Ultimately he expanded his personal narrative by stating «I feel like I can just go do things again.... I'll be OK.» In terms of occupational

assessment, the student therapist determined that he needed additional practice in strategies for safe mobility, particularly in restricted spaces such as closets where wheelchair use was awkward.

5. RE-SYNTHESES FOR THE FUTURE

After successes in instrumental occupations around his apartment, the therapist assisted the man in his desire for participation in the broader community (markets, restaurants, theatres, etc.). A major focus was the prevention of falls in community-based occupational forms.

Conclusion

The Conceptual Framework for Therapeutic Occupation is a logical system for occupational analysis and synthesis. CFTO as an overall system and each concept in CFTO are designed in accordance with the logical rules of precision, parsimony, exclusivity, and exhaustiveness (rules described in Nelson, 2006). In the examples above, rigid segregation among terms has not been used for the sake of fluidity and comprehension. But it is possible for a student of CFTO to parse each word in the above examples into the basic terms: occupational form, developmental structure, meaning, purpose, occupational performance, impact, and self-adaptation. Logic is expected in a true profession and is necessary in science. CFTO is also compatible with all models of practice, and provides a systematic way to compare models of practice (Nelson, 1997).

Whether or not the Conceptual Framework for Therapeutic

Occupation or some other system is used, occupational analysis/synthesis is the essential and defining occupation of the occupational therapist. Since the days of Eleanor Clarke Slagle, this process has been the profession's unique contribution to health care. Our specialty is to know about occupational forms in all their variety and to perceive the special capabilities of persons so that a therapeutic match can be made. Given its centrality to the profession, occupational analysis/synthesis should be the primary focus not only of practice but also of education and research.

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