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Original Article

Doing occupational transitions: a constructivist grounded theory from the viewpoint of adults on the autism spectrum[1]

Fazendo transições ocupacionais: teoria fundamentada construtivista a partir do ponto de vista de adultos no espectro do autismo

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Abstract

Introduction: People on the autism spectrum often struggle to transition smoothly between occupations in daily life. **Objective:** This qualitative inquiry aimed to understand the human and non-human factors that influence occupational transitions from the perspectives of adults on the autism spectrum. **Method:** Using a constructivist grounded theory design, this study purposively gathered data from eight adults on the autism spectrum who shared their viewpoints via semi-structured interviews and self-produced written texts. Framed by the Cultural Historical Activity Theory, an iterative process of constant comparative analysis was employed, yielding six categories that constituted the assembly of a working theory on occupational transitions among adults on the autism spectrum. **Results:** Drawn from eight participants, the six categories were: 1) getting ready, 2) the attributes of the occupation, 3) the others, 4) strategies of the moment, 5) cumulative stress, and 6) possible ends of the process. **Conclusion:** Our findings revealed a nuanced understanding on occupational transitions for adults with autism. First, materiality (non-human entities) serves various purposes in occupational transitions, implying that in some cases, intangible materials (tacit knowledge) would be enough to initiate, aid, or terminate occupational transitions. Second, doing transitions together through the optimization of social support and resources can make occupational transitions more meaningful for adults in the autism spectrum. It is our ambition that these propositions be tested and emphasized in occupational therapy, healthcare, and social care practices.

Keywords: Autism Spectrum Disorder, Occupational Therapy, Human Activities.

[1]Ethical clearance: BASEC-Nr: Req-2021-01412; Cantonal Ethics Committee Bern, Switzerland.

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Resumo

Introdução: Pessoas no espectro do autismo frequentemente enfrentam dificuldades para transitar entre as ocupações na vida cotidiana. **Objetivo:** Esta investigação qualitativa teve como objetivo entender os fatores humanos e não-humanos que influenciam as transições ocupacionais a partir das perspectivas de adultos no espectro do autismo. **Método:** Usando a teoria fundamentada construtivista, este estudo coletou dados intencionalmente de oito adultos no espectro do autismo, que compartilharam seus pontos de vista através de entrevistas semiestruturadas e textos escritos por eles próprios. Abordado pela Teoria da Atividade Histórico-Cultural, foi empregado um processo iterativo de análise comparativa constante, resultando em seis categorias que constituíram a montagem de uma teoria prática sobre transições ocupacionais entre adultos no espectro do autismo. **Resultados:** Foram extraídas as seis categorias: 1. Preparação, 2. Atributos da ocupação, 3. Os outros, 4. Estratégias do momento, 5. Estresse acumulado, 6. Possíveis fins do processo. **Conclusão:** Nossos achados revelaram uma compreensão detalhada sobre transições ocupacionais para adultos com autismo. Primeiro, a materialidade (entidades não-humanas) serve a vários propósitos nas transições ocupacionais, implicando que, em alguns casos, materiais intangíveis (conhecimento tácito) seriam suficientes para iniciar, auxiliar ou finalizar transições ocupacionais. Segundo realizar transições juntos, através da otimização do suporte social e dos recursos, pode tornar as transições ocupacionais mais significativas para adultos no espectro do autismo. É nossa ambição que essas proposições sejam testadas e enfatizadas nas práticas em terapia ocupacional, na saúde e na assistência social.

Palavras-chave: Transtorno do Espectro Autista, Terapia Ocupacional, Atividades Humanas.

Introduction

Occupational therapists and occupational scientists have been interested in looking at life transitions, affecting human occupations, both in practice and in research. A life transition is characterised as the discontinuity or interruption of a person's life space and pattern that can lead to the adaptation and alternation of roles, habits, identities, health and well-being and occupations of people (Nayar & Stanley, 2015; Blair, 2000). Transitions have been studied from an occupational perspective, specifically surrounding life events such as retirement (Cahill et al., 2022; Pepin & Deutscher, 2011), smoking cessation (Luck & Beagan, 2014), and displacement and migration (Suleman & Whiteford, 2013; Huot & Rudman, 2010).

Transitions in doing occupations, regardless of level, can cause pain and anxiety (Blair, 2000) and requires assistance and support especially for children on the autism spectrum (AS; Grandisson et al., 2020). The specific term "autistic inertia" is characterised by resistance to starting, changing, and stopping occupations among people on the AS (Buckle et al., 2021). Despite challenges in life transitions, the contemporary understanding of ASD espouses the concept of neurodiversity, which sees autism as a variation of brain functioning and not inevitably connected to suffering under a disorder (Stenning & Rosqvist, 2021). Hence, for this paper, the term "people on the autism spectrum" (people on the AS) will be used from hereon to foreground neurodiversity rather than pathology. People on the AS is a term more preferred by the autistic community (Bury et al., 2023).

Townsend & Polatajko (2013) differentiated occupational transitions into three levels: micro-, meso-, and macro-transitions. *Micro-transitions* happen when one stops an occupation to shift to another within the same context, *meso-transitions* involve changes in occupation and environment like leaving work to go home, and *macro-transitions* denote change in life circumstances such as retirement, becoming a mother, or moving to a new country to live and work. Studies on macro-transitions among people on the AS revealed difficulties in daily living posing the need for professional support (Nuske et al., 2019; Richter et al., 2019; Anderson et al., 2018; Marsh et al., 2017). Moreover, micro- and meso-transitions require similar support from professionals, in addition to parental support of those living with their parents (Grandisson et al., 2020; Canonica et al., 2018; O'Nions et al., 2018). To overcome challenges in transitions, interventions such as using activity schedules, rewards, and positive reinforcements have been used in school-based occupational therapy (Patriquin et al., 2020). However, people on the AS continue to experience challenges in transitions due to urges for predictability, or avoidance of engaging in occupations perceived as challenging or unfamiliar (Sevin et al., 2015; Brewer et al., 2014; Sterling-Turner & Jordan, 2007).

Despite having considerable body of literature regarding people on the AS and transitions, research that includes the viewpoints of people on the AS remains limited (Welch et al., 2022). An interventional study by Palmen et al. (2012) investigated the use of the personal digital assistant (PDA) to support independent transition between daily activities among adolescents with high-functioning ASD. While this study involved people on the AS, it did not involve the investigation of the process and complexity of transition within occupations.

In this study, we argue that an occupational transition is a complex process regardless of its level. To help us unearth the complexity of occupational transitions, we approach our study from a sociomaterial perspective, specifically using the Engeström's Cultural-Historical Activity Theory (CHAT) as a theoretical framework (Engeström et al., 1999) to situate our grounded theory analysis. A sociomaterial perspective views any human activity as a product of the complex entanglement and inseparability of human and non-human entities (Burm et al., 2019; Fenwick & Nimmo, 2015; Orlikowski & Scott, 2008). In using this perspective, sociality (human) and materiality (non-human) are perceived to have equal influence in producing and reproducing actions and practice (a group of interrelated actions). Therefore, we view an occupational transition as an occurrence in-between activities and occupations, where the success or failure of transitions is influenced by both human (i.e., people on the AS) and non-human entities (i.e., environments, contexts, and technologies) (Krieger et al., 2021; Smith & Sharp, 2013). Findings from this grounded theory inquiry could potentially provide occupational therapists, family members, carers, and other health and social care professionals a nuanced understanding about people on the AS, their means and processes in overcoming and coping with occupational transitions, and the mediating non-human elements that make occupational transitions possible.

Objective

In this paper, we intended to ask the question: "From the viewpoint of people on the AS, what influences the process of making transitions between daily occupations?" To do that, we aimed to understand the processes of making transitions between occupations in the daily lives of people on the AS. Findings from this grounded theory study aim to support the generation of a theory that guides the professional reasoning of occupational

therapists especially in supporting people on the AS to navigate between contexts, environments, and occupational transitions towards their daily life participation.

Method

Study design

This study used a constructivist grounded theory (CGT) methodology (Charmaz, 2014) in order to explore and develop a working theory about the process of making occupational transitions among people on the AS. This explorative and qualitative inquiry is the first step into a rather unknown topic investigated within a particular situational context (Swedberg, 2020; Chiovitti & Piran, 2003). The theory development process involved the use of the CHAT as a guiding theoretical framework to characterize occupational transitions among people on the AS, drawn from their own perspectives. To begin this process, we collected data through individual interviews with people on the AS. Interview questions were consciously framed by the CHAT conceptual components i.e., subject, object, tools, rules, division of labour, and community. Qualitative data sets, drawn from these interviews, were analysed using an inductive approach to develop categories that would collectively constitute the working theory. This study also followed the ethical principles under the Declaration of Helsinki (World Medical Association, 2013) with ethics approval from (removed for peer review).

Theoretical framework to inform our method

The CHAT was originally proposed by Lev Vygotsky and further developed and popularized by Alexei Leontiev and Yrjö Engeström (Bal et al., 2021). There have now been three iterations or generations of the CHAT labelled as Vygotsky's theory of cultural mediation (first generation), Leontiev's practical human activity (second generation), and Engeström's CHAT (third generation). While known as a cross-disciplinary framework to understand social realities within cultural, historical, social, and material contexts (Roth & Lee, 2007), CHAT has been used in the same way within occupational therapy and occupational science literature (Gretschel et al., 2015; Humphry, 2005; Toth-Cohen, 2008). For this study, we used the second generation of the CHAT (see Figure 1; Engeström et al., 1999; Foot, 2014) since we are concerned with seeing the human activity from a collective perspective i.e., examining the dynamic mediation between the people on the AS and his or her interaction with the six CHAT components.

The second generation of the CHAT constitutes an activity system where the six components interact constantly overtime. Framed by the CHAT, we situate our study within this activity system where the *subject* (i.e., people on the AS) is the individual or group that operates to achieve a particular *object*, which can be tangible or intangible goals that motivate the subject (i.e., enact occupational transition). The *tools* are the material (e.g., everyday objects, tangible instruments, environments, and technologies) and non-material (e.g., knowledge, symbols, language, signs, contexts, and cultural artefacts) entities that support the subject in achieving the object. The subject belongs to a social context called a *community* that consists of individuals who share the same object with the subject (i.e., people on the AS, their family, friends, and carers). *Rules* constitute norms and conventions that control and guide the operationalisation of the activity within cultural and historical contexts. Moreover, the subject and the community are mediated by these rules and *division*

of labour, which then pertains to the distribution, coordination, and management of tasks and responsibilities among people on the AS and the community. In the end, the constant mediation and interaction between and across these CHAT components will yield an *outcome,* which denotes short- and long-term consequences of the activity system. Within the interview data sets, situated examples of the six CHAT components were explicitly and implicitly reflected via the direct quotations and descriptions, while the outcome are the categories that characterize occupational transitions.

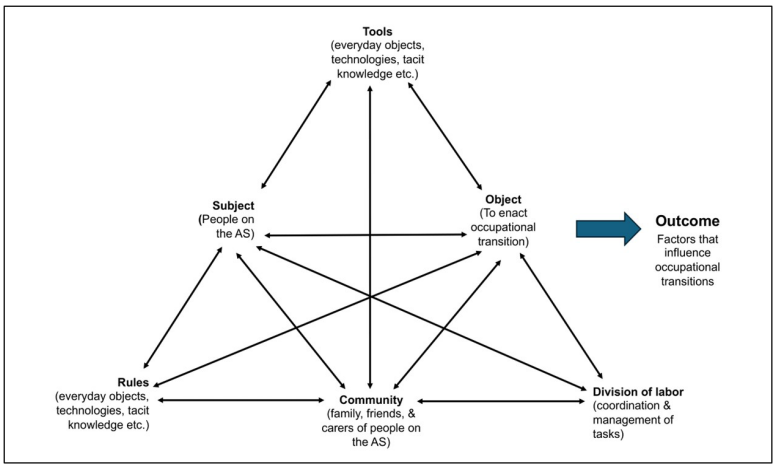

Figure 1. The second generation of the CHAT contextualized to the study components.

Participant recruitment

Following purposive sampling, eight participants were recruited through organisations concerned with people on the AS in a high-income country located in central Europe, various social media groups, and through the professional network of the first author. The inclusion criteria were people on the AS who are 18 to 65 years of age living in that high-income central European country; they should be able to communicate verbally and/or in writing; and they should express that they have experienced challenges in the past regarding occupational transitions, which was a concept described to the participants by the first author. To meet the inclusion criteria, the participants should have signed the informed consent and confirm that they have perceived transitions as inconvenient. In other words, they have experienced situations where shifting between daily activities slowed them down, required more effort or assistance, was avoided, or evoked discomfort or anxiety. People on the AS who had direct contact with the first author, for example in a client-therapist relationship, were excluded from participating in the study to avoid power-relation bias and conflict of interest. The whole data collection process was conducted in a non-English local language from January to April 2022. Data saturation, or the occurrence when the qualitative data presents repeated characterizations of occupational transition, was eventually achieved after recruiting eight As the concept of saturation can be controversial (Mason, 2010) and probably difficult to achieve within a limited time frame, the data collection ended when the time limit of 3.5 months and the minimum of seven participants was reached. Charmaz & Thornberg (2021) mentioned in their guideline for quality of CGT that enough data should be collected to make meaningful comparisons, with at least 7 participants, which was the case.

Data collection

The data sets collected were mainly from the individual interviews. In addition, optional written texts from diaries and photos provided by some of the participants were included to triangulate the data later. Respondents who met the inclusion criteria were initially contacted by electronic mail to inform them about signing the informed consent and ask about their demographic information and their planned manner of data collection. There were two options offered to them. *Option A* involved making a list of activities where the participants experience occupational transitions. This option could be done for about two days to allow for flexibility. The list was then sent back to the first author and followed by a 45-minute individual interview online. *Option B* involved writing diary notes within a span of about two days. These notes were also sent back to the first author, followed by a 20-minute individual interview online. It is important to note that the lists and diary notes that were given back to the first author were crucial in adapting the interview questions, making the interview process more personalised and contextualized. The interval between submitting the written texts and the scheduled interview spanned from one to five days.

Although the participants were given the chance to choose the mode of interview from phone call, instant messaging systems, video call to physical meeting, all the interviews were audio recorded to aid the analysis later. Moreover, the written texts, namely a list or diary, were also given as an option, rather than a requirement, to allow for flexibility and participant autonomy. Embedding the CHAT components consciously, the interview questions were phrased as listed in Chart 1.

Chart 1. Interview questions asked to the participants underpinned by CHAT.

Open questions unrelated to CHAT:
1. Describe the transition between ... and .... Explain everything to me in detail.
2. What happened during the transition?
3. What influenced the transition?
4. (What influenced the transition positively?
5. What influenced the transition negatively?)
6. What are you doing to influence the transition?
7. What do you think is influencing the transition?
8. What are others doing to influence the transition?
Mediating Artifacts (mediating objects/tools):
1. What did it look like there?
2. Describe the environment. Did the environment have an impact on the transition? Did the environment change from one activity to the next?
3. What objects played a role in the transition?
4. What objects are present?
5. Which of your thoughts accompanied the transition? What did you think?
6. What knowledge was present? What did you know about the transition, the activity after or before?
7. What knowledge was missing? What did you not know about the transition, the activity before or after?
Rules
1. What rules apply during the transition or in the activity before or after?
2. Do the rules influence the transition?
Object/Outcome (only if not obvious)
1. What was the task/goal of the activity before the rather difficult transition?
2. What was the task/goal of the activity after the rather difficult transition?
3. What was the result of the activities?
Community and Division of Labour
1. What people were around during the transition? What was the task of these people?
2. Who had what role in the activities before and after the transition?
3. What are the others doing to influence the transition?
Final Question
Is there anything else you would like to say about the transitions?

Data analysis

All the data collected were transferred into an anonymised written text following initial coding and then focused coding. Later, categories were clustered following the CGT method (Charmaz & Thornberg, 2021). For this study, the written notes from the diary and lists of activities were labelled as "elicited texts" (Charmaz, 2014, p. 47), which gave the participants the freedom to select the experiences they wished to focus on. These elicited texts were coded in the same way as the interview transcripts. Written memos maintained throughout the coding process helped to construct and define the categories. The first author initially analysed and interpreted the data in an iterative process with several rounds, constantly comparing between participants and between smooth and inconvenient transitions. The iterative process involved the last author in scheduled occasions. The codes generated initial categories, which were then analysed iteratively by the first and last authors until they reached consensus towards generating the final categories, which shaped the working theory on occupational transitions for people on the AS. We used MAXQDA 2022 (VERBI Software, 2021) for data analysis, which involved supported data storage, transcription, and initial coding. In addition, manual sorting using sticky notes was employed to group codes and form focused codes and categories.

Standards of rigour for grounded theory studies

Following the standards of rigour for grounded theory studies by Chiovitti & Piran (2003), we outlined specific procedures based on *credibility*, *auditability*, and *fittingness* standards. In terms of *credibility*, participants were allowed to lead the inquiry process while the researcher was there to guide that process. While member checking was not done in its truest sense, credibility was ensured since participants' actual words as well as their own meanings were used to inform the working theory. The first author was also aware that her understanding on ASD is underpinned by her 20 years of occupational therapy practice working specifically with people on the AS. All data sets were interpreted keeping in mind the first authors' own preconceptions and biases. To facilitate reflexivity, she used a journal to write down her reflections and own biases throughout the data collection and analysis processes (Birks et al., 2019). In terms of *auditability* and *fittingness*, all authors took deliberate efforts to adhere to the guidelines on autism research (Gowen et al., 2019; Nicolaidis et al., 2019; Berthelsen et al., 2018) to avoid risks and unintended harm throughout the qualitative inquiry process.

Results

A total of eight people on the AS participated in the study, of which 5 were identified themselves as female, two as male, and one non-binary. Most of them were within the age range of 45 to 65 years old, with only one participant who is 18 years old. Half of them live alone, three live with a partner or family, and one lives with peers. Half of them declared that they do not engage in formal work, while the others were doing part- or full-time jobs. In terms of data collection options, five chose Option A, two chose Option B, and one did not provide any written texts and only participated in the interview. It is interesting to note that the participants were mostly middle-aged and senior adults, except for one who was 18 years old. It could be presumed that using

Facebook as a platform for recruitment could have affected this since Facebook tends to be used more by this age range. Moreover, it is important to point out that most of the participants were diagnosed as adults, rather than from childhood. This could also imply that they themselves were still feeling newly acquainted with their identity as a person on the AS. A summary of the participant demographics can be viewed in Table 1.

In the end, six categories were formed to help construct the working theory: 1) getting ready, 2) the attributes of the occupation, 3) the others, 4) strategies of the moment, 5) cumulative stress, and 6) possible ends of the process. The first five categories characterize the influences on the process of making occupational transitions, while the final category represents the end of this process. Table 2 presents an overview and interrelationships of the categories, subcategories, and focused codes.

Table 1. Characteristics of the participants.

Participant*	Gender	Age	Living Situation	Daily structure	Option chosen	Interview mode
Roman	male	57	alone	no work, 6/7 days lunch at a community facility; once a week one afternoon in a streetworker organisation	only interview	video call
Helga	female	63	with partner	part-time work (40%) in own company	list	video call
Alice	female	62	alone	part-time work (one day)	diary	video call
Yvonne	female	47	alone	no work, on sick leave since 3 months, hobbies	list	video call
Daria	female	56	with partner	part-time work (every morning)	list	live meeting
Bente	non-binary	18	supportive housing with peers	full-time apprenticeship	list	email
Lukas	male	53	with partner and children	no work, structure through family life	diary	video call
Karin	female	52	alone	no work, engagement in volunteer projects	list	video call

*Pseudonym.

Table 2. Overview of the final categories and related subcategories and focused codes.

Category		Subcategory	Focused codes (examples)
1	Getting ready	Using and organising implements	Using lists, maps, and planners
			Alarm clock
			Putting objects ready
			Autism identification card
			Dressing
		Thinking through	Knowing options
			Giving a frame
		Adapting time	Avoiding crowds
			Arriving early
			Coming late, going late
2	Strategies of the moment	Rewarding (before or after)	Eating chocolate
			Occupying with preferred interest
		Soothing	Holding objects
			Folding laundry
		Changing position or visual fixation	Looking at specific positions
			Changing place

Table 2. Continued...

	Category	Subcategory	Focused codes (examples)
3	The attributes of the occupation	Agreeing on	Favourable vs disliked
			Clear vs unclear
		Feeling ambivalent or disagreeing	Indefinite vs predefined
			On your own vs with/for others
4	The others	Assuming nudging roles	Being a starter
			Being a connector
			Not understanding
5	Cumulative stress	Exhaustion	Fear
			Demands on yourself
			Sensory input
			Clutter
			Age
		Thoughts from before	Switching off thoughts needs energy
		Refraining	Not doing
			Postponing
			Forgetting

Category 1: Getting ready

This category begins the process of occupational transition in this study through preparatory processes including preparing the environment, planning and thinking ahead, and time management.

Using and organising implements

All the participants did preparatory actions before doing some of their daily occupations. These actions often made it easier to make a later transition, but they could also cause a loss of time for the actual occupation. The preparatory actions could take place immediately before an activity, or days or weeks before. All participants used and organised implements before making transitions. Implements can be various utensils or equipment directly needed for the engagement in occupation but also diverse tools to plan, have an overview or remember the subsequent occupation. Participants used traditional planners, to do lists, pictograms of routine activities, maps, and alarm clocks but also nutritional supplements or even tranquilliser drugs before particularly upsetting occupations. Alice and Daria scouted the environment using virtual maps with detailed pictures when they went to an unfamiliar place. Lukas studied a photo list of the members of his club in advance to manage his face blindness as he values greeting by name. Half of the participants put objects in the right order, on top of an object of the following occupation or just near the space, where they will do it. Roman felt safer leaving the house with an emergency card in his wallet, which states that he is autistic, and he uses medication if he has an appointment with government agencies:

> […] *and for me the government agencies are basically like... I basically feel like I have to go to the execution. It's so challenging for me, so in the meantime I have Lorazepam as an emergency medication. Before I even go to a government agency, I take a pill. I don't go without a pill.*

Sometimes tools were disregarded on purpose; for instance, Helga ignored her planning calendar, and Alice did not react to the alarm reminding her to go to the cinema.

Due to sensory difficulties, half of the participants felt challenged deciding what clothes to wear before making transitions. Karin assembled sets of clothes in advance to ensure that her clothes fit well together. Dress codes at events alleviated Lukas' worries even though he experienced sensory challenges wearing a suit. Yvonne had to submit a certificate to her employer so she could wear her own shoes at work.

Thinking it through

Another preparatory action that five participants applied was to think the upcoming occupation through. Helga recited social rules before an event like a birthday party and Karin considered every possible course of the evening when she went to a concert and stated:

> *I think ahead, who will I meet, who could be there, and maybe I will get there and maybe nobody I know will be there, so if plan A will not work, there's still plan B and C and D and maybe then R or S will be applicable. Every now and then, I say 'luckily my brain has skin over it, so my brain cells don't jump away'.*

Even though they considered possible options beforehand this does not mean that they planned everything in detail, rather they drafted a framework in their head within which they left space for spontaneous decisions and incidents. Alice expressed:

> *I make myself like a framework and in there I have certain fixed points ... I can do that, maybe other autistic people can't. But I can do that, that I really have a framework that still has scope in it, these variables in there can then arise freely.*

Adapting time

Six participants adapted the time for certain occupations. Crowded times were avoided for buying groceries or taking the bus. Karin left the house five minutes earlier so that she had time to go back in case she forgot something. Helga arrived as late as possible to the choir practice so that the small talk part was shorter. Conversely, to avoid initiating social contact Lukas arrived early and left the club meeting late, saying: "*I always have to make sure that I leave home early, so that I am there early so that the others have to say hello and I leave as the last one so that the others approach me to say goodbye*".

Category 2: Strategies of the moment

During transitions several strategies were used by the participants to make the process easier and more comfortable. This category is closely linked to "getting ready" as some of these strategies also include preparatory actions but in contrast to the getting ready category include a more active doing of the person in the moment. The six female participants used relatively more varied strategies than the men. Bente reported no strategies.

Rewarding

Rewarding after the occupation or giving himself more time to transition were strategies used by the two men. For example, after the cycling in his cellar Lukas allows himself to read favourite books and occupy himself with pewter figure.

Soothing

One of the strategies used by the women was doing some other short actions or occupations to soothe themselves during the transitions. Some hold objects in their hands such as chestnuts, a piece of fur, or a comb. Yvonne explained:

> *Other people have some kind of animal or whatever, and I have a piece of sheep fur in my pockets that nobody sees and then I can massage it. ... It simply has a calming effect and I find it a super tool.*

Furthermore, Yvonne performed breathing exercises and put essential oil on her wrist. Karin folded laundry to calm down before the transition and Helga read or listened to music instead of participating in the small talk part before choir practice started.

Changing position

Another strategy of the moment was adapting their physical positions and having a visual fixation point. Daria, who is sensitive to visual distractions because of her hearing impairment, looked at the floor while walking through the station. Helga looked out of the window as she walked towards her choirmates. Karin changed her position to look at accurate hanging photos on the wall instead of through a glass door at a busy reception.

Category 3: Attributes of occupation

According to the participants occupations possess or are labelled with certain attributes that could make transitions easier or harder. These attributes could belong to the upcoming or the previous occupation but did not imply that the occupation itself is easy or hard. The occupation could stay the same, but the varying attributes influenced the experience of the transition.

Agreeing on

These attributes of occupation were therefore not determined by the occupation, but were attached to the occupation by the participants. For example, Bente happily used public transports when she was free to decide where to go but experienced taking the train to go to work as demanding. For some attributes, the participants agreed that these make the transitions easier or more difficult.

Favoured vs disliked

Participants agreed that transitions in favoured occupations are much easier than in disliked ones. Conversely, a favoured occupation could delay transitions because participants lost themselves in it. Roman and Helga even neglected basic occupations such as eating and sleeping by being absorbed in favoured occupations.

Clear vs unclear

Clearly defined occupations eased transitions for all participants as they were expected, planned, timed, and logical. Alice described how she labels the occupations are easiest to get into: "*I am at my best when I can start it according to my logic, according to my idea of efficient, structured, practical, optimal, respectful, attentive, correct, meaningful, sustainable, orderly, aesthetic, creative*...". In contrast, unclear occupations,

which were unexpected, endless, illogical, and therefore harder to start, and so required additional time to think about, were challenging. For example, Daria became confused when her husband did not cook risotto as expected whereas Karin hesitated in her transition to an appointment due to a noiseless bell and expressed:

> *The sign says ring the bell and enter, but if I press the button, I don't hear any ringing. But it could be that they have a red-green light at the front reception when someone rings outside, so it's not perceptible through the ears* [...] *But I haven't managed to ask yet. Then I think: Should I ring the bell now even though it doesn't ring audibly for me? That's another hurdle in addition to the way.*

Feeling ambivalent or disagreeing

Participants expressed differing or opposite opinions about other attributes of occupation. What could be a push into making a transition for one person could be a deterrent for another.

Indefinite vs predefined

Doing occupations in the way they wished and with creative freedom eased the transition for some while others preferred starting predefined occupations. For example, Yvonne, Roman, and Bente easily started self-chosen occupations, unlike Daria, who transitioned better if the task was predefined by her employer. To illustrate, Daria stated: "*I distract myself instead of cleaning up. I have that in everyday life almost every day. At work it's different, I get tasks that I have to do. Privately it's not the same*".

On your own vs with/for others

Whether an occupation happened with or for others influenced making transitions differently for participants. Daria and Karin easily start doing things for others, even better than for themselves. Alice initiated and enjoyed the short talk with a librarian, while Helga and Lukas easily transitioned into calm occupations on their own and struggled to start social occupations and had ambivalent thoughts about the benefit of participating. Lukas is member of various associations (cooking club, student fraternity) and questioned if these social gatherings were only stress or they had a beneficial effect. Similarly, Helga liked to sing in a choir together with other people, but she expressed ambivalently about the socialising:

> […] *it is so exhausting to come into this room with all the people, that I really like, and apparently they like me too, and they want me to call them from time to time and arrange a meeting or visit them; it would never come to my mind, why should I visit somebody, with whom I just have sheet music in common. ... just visit them to talk over a coffee, I find this a waste of time.*

Category 4: The others

All participants explained how people, known or unknown, can influence the transition. This category refers to all people around the participants and is labelled "the others", because participants explicitly talked about the people around them coming

from a neurotypical world and having thoughts that highly differ from their own. Daria expressed: "*My husband has a way of thinking, that I don't have*".

Nudging role

On one hand the others created impeding situations, on the other hand they assumed nudging roles. The others could take on the roles whether they were present or absent, as the influence was also there when the participants were thinking of them. A negative or positive influence on the transition was not linked to the person; a person could hinder or nudge depending on the situation. A "nudging role" implies that others gently pushed the participants into the transition, and this could happen in two ways: either as a "starter" or a "connector".

Being a starter

A starter initiated an occupation and participants reported that they followed this impulse for making transitions. The participants in a relationship (Lukas, Helga, and Daria) sometimes relied on their partners as starters. Helga described how she followed her partner when going to bed and if the partner was absent, she sometimes did not go to sleep. Furthermore, Lukas described a situation in his diary, in which his wife initiated a transition and interrupted his favourite occupation:

> *I'm sitting comfortably with my special interests, looking forward to a quiet Sunday, then suddenly I have to plan an outing at my wife's request. The sudden task* [and the knowledge that opposition is futile, as my wife is right that we should do something] *causes stress, even though I can handle such tasks well at short notice*.

Strangers could also initiate a transition. For instance, Bente, who works in a bookstore, shared their experience: "*As usually when I was stuck, someone came to ask something. A colleague or a customer. That brought me back to the real situation*".

Being a connector

Seven participants described situations in which other people assumed the role of a connector. Connectors were only familiar persons of trust, and they made the participants feel more comfortable to transition by just being there or giving explanations. Daria`s husband supported her during emotional situations by explaining the behaviour of others, which helped her to transition. Karin went to a theatre alone even though she planned to go with her ex-partner and was relieved to see familiar people that would understand her behaviour.

Impeding situations

On the other hand, if other people did not understand or make the participants feel understood, they could impede the transition to all kinds of occupations. Karin's doctor could not understand that she was in terrible pain because she was covering her pain by smiling. Alice's employer expected her to understand what she wanted without using words, and this impeded the transition to work. Alice wrote: "*It often happens that I must make my employer aware of this: 'I don't live in your head, I don't know what you think or how you think'*".

Seven participants reported that other people often contributed to unpredictable situations. If other people talk too much or ask too many questions, this could lead to the sudden stop of an ongoing occupation or transition. Furthermore, unexpected actions of others could cause a transition that needed more time or felt uncomfortable. For example, Bente's flatmate unexpectedly occupied the toilet or Lukas's wife suddenly proposed to go for a walk.

Category 5: Cumulative stress

Participants experienced that their ability to transition was inconsistent and can be affected by what happened during the whole day, days before or even longer ago. Alice stated: "*Some days it can be a lot easier for me and other days it's tougher, where I have to cover like several aspects so that the conviction or the impulse is there to really turn off the TV*". All participants talked about the stress or strain they experienced and that this cumulated over the day.

Exhaustion

The feeling of exhaustion made transitions more difficult and was caused by a variety of inputs including anxiety, putting demands on themselves, sensory input, bad sleep, or menstruation. Even clutter in the environment could add to the stress of the day as Karin wrote: "*Tidying up, seeing plastic containers. Thinking about getting rid of them, although they are practical, because they are not in the shape I'm used to, and they keep confusing me*". Helga and Karin reported that their age made all kinds of things more difficult than when they were younger.

Thoughts from before

Furthermore, being mentally occupied with previous occupations made the transitions uncomfortable. Daria still thought about not finishing household chores while she went to work. Also, Bente hesitated to start its next task thinking about a discussion with its chief.

Category 6: Possible ends of the transition

In the end, the process of transition could conclude in two ways: the actual transition to the next occupation or refraining from it.

Rolling stone

Half of the participants perceived a successful transition as self-propelling and like a rolling stone: hard to push in the beginning but later it got easier and just continued. Roman commented to got to the bathroom and to start to brush his teeth: "[…] *once I'm there and I've started, then it rolls, but until I get there, that's the point*".

Refraining

If they refrained from doing the occupation, it could be that the occupation did not take place at all, was postponed, or interrupted for shorter or longer period. There were different reasons why an occupation did not happen at all: Roman avoided challenging occupations, Karin stopped forcing herself, Lukas and Helga completely forgot some occupations. Participants disagreed on whether postponing an occupation can be

helpful. Helga accepted her postponing just as a part of herself and stopped putting herself under pressure. When Yvonne had to bring money to a safe in a narrow basement room, she reported that postponing this occupation would have been the solution saving her from a meltdown. In contrast, Karin saw postponing as a first sign of collapsing and the need to have less appointments, as did Daria, who experiences postponing as tiring.

Visualising the process of making transitions

One of the objectives of this study was to provide a visual working theory on the process of making transitions between occupations among selected adults on the AS. Figure 2 depicts an attempt to illustrate the categories (with numerical representation) drawn from the study findings. The circles represent the three phases of the iterative process of making transitions and the arrows link the phases to a closed loop as occupations sequence each other. The arrow leaving the process from "refraining" indicates that the transition is not taking place. The five categories, that influence the process, are in rectangles in contrast to the two subcategories in oblongs, designating the two possible ends of the process. Getting ready and strategies of the "moment" are linked timewise to the stages before and at the moment of making transitions versus attributes of the occupation and the other people that can influence all the stages of the process. As one of the attributes of occupation is on your own versus with/for others, it is linked to the category the others and expressed with the double-headed arrow in between. The cumulative stress is present like a fog in the background during the whole process as depicted by the dashed line.

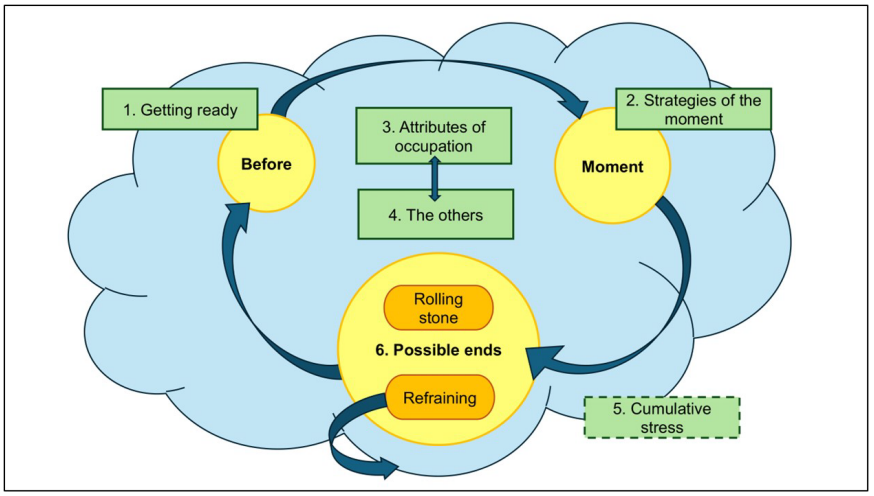

Figure 2. The working theory drawn from our findings depicting how occupational transitions occur for adults in the autism spectrum.

Discussion

Findings from our study revealed the nuances in the occupational transition processes as experienced by eight participants within the autism spectrum. Our nuanced understanding is constructed through the six categories that emerged from our grounded theory analysis, underpinned by CHAT concepts. These categories provided baseline information to initiate the aim of our theorization process yielding a working

theory as visualized in Figure 2. Among the six categories, two are crucial elements to facilitate occupational transition (i.e., getting ready [category 1], strategies of the moment [category 2]), three influence the whole occupational transition process (i.e., the attributes of the occupation [category 3], the others [category 4], cumulative stress [category 5]), and the final, sixth category (i.e., possible ends of the process) concludes the occupational transition process.

Materiality serves various purposes in occupational transition

Using CHAT as a theoretical framework allows for a unique contribution since it highlighted not only the human influences in occupational transitions but demonstrated a more or less equal importance of the non-human influences.

Participants used *material* and *conceptual tools*—both non-human entities—to ease occupational transitions mainly while getting ready to transition (category 1) and during the process of devising strategies for transitions (category 2). In our study findings, material tools could mean any items people can touch and conceptual tools such as lists, maps, and planners—all of which are commonly used by people on the AS to help them organise their daily life activities (Sevin et al., 2015). For instance, some participants used *material tools* to intentionally place items in the order of doing or also on top of other items. This material arrangements could imply that tools are used to trigger the start of engaging in an activity or occupation. However, this was in contradiction to the study of Buckle et al. (2021) where material tools were perceived as a physical barrier that block occupational participation and transition. Arguably, selected participants used these material tools to help them organise which activities to do first, second, third, and so on, whereas some would prefer flexibility in using these material tools to allow for spontaneity to also challenge themselves in navigating rigid behaviours and addressing unpredictable circumstances.

The purpose of optimizing the use of material tool could depend on two things: characteristics of autism presented by the participants and level of maturity in terms of age. These could imply that material tools are used by people on the AS for various reasons and not mainly to generalise that these non-human entities are only used to make occupational transitions easier for people on the AS.

Moreover, this argumentation could help occupational therapists reflect about the predisposition to provide materials and tools to clients when intangible materials such as tacit knowledge is sufficient. It is then pivotal that our findings could enhance the therapeutic interaction between occupational therapist and client by exchanging thoughts on what materials tools could be helpful in occupational transitions and be open to the idea that these tangible tools may not be the most important thing to think about but rather the intangible ones.

Doing transitions together

The other component of the CHAT is *division of labour*, which pertains to the shared participation and responsibility in the activity determined by the community (Engeström et al., 1999; Foot, 2014). Division of labour was articulated in our study findings, specifically for participants who were in a relationship. These participants

often relied on their partner's guidance to transition such as chronologically matching their transitional processes to occupations like preparing to sleep.

Wilson et al. (2014) found that neurotypical partners of people on the AS use prompts to facilitate interaction and occupational engagement; however, a dependency on these prompts could pose certain challenges for couples.

Getting prompts from other people could also help occupational transitions especially when the participants are doing preferred occupations that require high level of motivation and engagement, especially for people on the AS (Grove et al., 2016).

To an extreme, people on the AS can engage in *hyperfixation*, which had been perceived to be an impediment to social interaction among children on the autism spectrum (Turner-Brown et al., 2011). But this perception has been challenged later with a paradigm shift where preferred occupations by people on the AS were seen as a strength towards learning (Winter-Messiers, 2007) or vocational prospects (Patten Koenig & Hough Williams, 2017). Some participants in the study mentioned that increased engagement in special interests hamper the transition to the next occupation, but they did not describe this as problematic, rather they expressed that their partners helped them in two ways—terminate their engagement and co-initiate the transition to the next occupation.

The contribution of other people on the process of making transitions suggest an important implication for occupational therapy practice, research, and policy. Challenges in going through occupational transitions cannot be addressed solely from an individual viewpoint since the transitional process is largely influenced by other people, materialities, and environments. The recent development of interventions in occupational therapy takes this into account, for example where interventions focus on improving employers' knowledge and skills in work adaptations and on developing tools to make workplaces more autism-friendly (Scott et al., 2022). Our findings support the intentionality of including family members, co-workers, and social resources to support people on the AS in their occupational participation, engagement, and transition.

Study strengths and limitations

We acknowledge some limitations in this study that can be addressed through further research on the topic. Firstly, the sample is limited to adults on the autism spectrum who are mostly in in their late adulthood (mostly between their 50s and 60s) who can read or write, a bias typically recognisable in autism research (Russell et al., 2019). Secondly, recruiting from social media could play a role in getting participants who do not have severe social problems, are highly functioning women, and those who are already self-advocates. While considered a limitation, this could also be considered a strength since this study could contribute to the current evidence on autism research, which typically would only study male persons on the AS (Lai et al., 2012). We encourage that further research be done to build on, criticise, and apply this working theory specifically for practice settings involving people on the AS.

Conclusion

Occupational transitions are an often taken-for-granted dimension in daily living, but for people on the AS, being able to make transitions is often observed to be essential to their health, wellbeing, and daily living. Our findings produced six categories that

constitute the construction of a working theory on occupational transitions for people on the AS, based on the viewpoints of people on the AS themselves. We are convinced that our working theory could provide a nuanced understanding for occupational therapists, professionals, and carers when working and interacting with people on the AS when they are in the middle of occupational transitions.

First, we posit that it takes more effort but also creativity for people on the AS to start, process, and end an occupational transition.

Second, we need to challenge our traditional understanding that the challenges in occupational transitions are due to autism traits. Rather, by bringing in the CHAT lens, we have seen that materialities (tangible and intangible) serve different purposes such as easing the process of occupational transition, organising transitions, or non-doing.

Third, it could also help us to reflect and acknowledge the fact that there are times when intangible tacit knowledge or environmental adaptation is enough to facilitate and complete occupational transitions among people on the AS.

Finally, we see the importance of the availability of social support and resources to ensure successful occupational transitions.

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Author's Contributions

This research was conducted in partial fulfilment of the first author's Master of Science in occupational therapy degree, that she carried out the research under supervision of the second and third authors. Renate Aeberhard, Michael Palapal Sy and Debbie Kramer-Roy were deliberately involved in the conceptualization, methodological design, formal analysis, drafting, reviewing, and finalizing the manuscript. All authors approved the final version of the text.

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