

Chapter 1

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The Gap between Research and Clinical Practice: Towards an Integrated Speech-Language Therapy

Purpose of the chapter

The gap between research and clinical practice is one of the main challenges in speech-language therapy. There have been many compelling reasons for this gap: lack of information exchange and dialogue between researchers and clinicians; the specific ways in which scientific inquiry has been conducted and scientific knowledge presented; lack of access to scientific journals; and sometimes, lack of interest in this knowledge on the part of clinicians themselves. The way knowledge is produced, and by whom, determines the specific nature of that knowledge, and the appropriateness and value of forms of knowledge must be established and re-established in any context of use, including that of theoretical discussions. Both research and practice are ongoing conversations. The continuous establishment (or not) of evidentiality of specific knowledge and forms of knowledge production should be facets of practice and research. This is a more realistic, and reality-based, way to cast the discussion than is the notion of achieving a fixed canon of evidence on which to base practice.

The ideas for a paradigm of practice- and client-based research and evidence presented here offer a variety of approaches to thinking about, and bridging the gap between, knowledge produced by research, and that produced in clinical practice within the field of speech-language therapy. Our central point is that this gap is best bridged by focusing on the client in a way that simultaneously advances the field. We advocate an active role for the client as chief stakeholder in speech-language therapy. This focus can be used to guide research on the efficacy and assessment of the explanatory value of research results by practitioners and researchers alike. We have chosen an eclectic and, we hope, inspiring mix of work from the social science and health research methodology fields spanning the past four decades. During this



period, the processes of professionalization of the field of speech-language therapy and the development of practitioners into researchers have paralleled the development of other practice-based fields in the health care sciences. We focus on the intertwined themes of pluralism and contextualism, drawing on work arising out of the ethnographic social science research tradition, and its more modern iterations in terms of forms of action research, and research on psychotherapy. Our account here is suggestive rather than prescriptive, underscoring our view that embracing the challenge and complexity of knowledge production requires us to place it at the centre of any discussion of an evidence base for the field.

Delineations of the gap: epistemological tensions

The gap between knowledge produced by research, and that produced in clinical practice has traditionally been characterized as that between theory and practice, and between academic researchers on the one hand, and practitioners or 'professional knowledge workers' on the other (Van de Ven & Johnson, 2006). However, in recent decades there has been a move toward expert professional organizations outside of academe becoming 'learning organizations', in which ordinary employees are expected to have university degrees (Eikeland, 2009). Health practitioners have increasingly engaged in research, and professional advancement within many practice fields is increasingly attained through academic qualification (a well-known consequence of which is the practitioner departing from practice and becoming an academic, a researcher or a manager). Alongside this increased emphasis on theoretical knowledge and academic institutional involvement in practice is the powerful position held by the still-dominant 'traditional' positivist view of empirical science. In this perspective, science serves a supreme Platonic Rationalism in the value-free pursuit of true knowledge – theories and facts (see, for example, Crossley's account of these issues and the social control function served by positivist approaches to health research and health education; Crossley, 2000). At the same time, presentations of science in popular discourse and the media draw heavily on the accompanying assumption that the driving motivation for doing scientific research is emancipatory and humanitarian (Lupton, 1995). The health and social welfare professions have both gained greater status for their knowledge bases (and for their ways of knowing), as well as higher moral ground by doing, or appearing to do, scientific assessment and investigation of practice (Murray & Chamberlain, 1999). Indeed, some form of research base for practice has long been a requirement rather than a choice or goal (Crossley, 2000), and *Evidence-based practice* has been an accepted framework in the field of speech-language therapy

since the 1990s (McCurtin, Murphy & Roddam, 2019). Evidence in the literature is still equated with claims made through top-down, theoretical research paradigms and quasi-experimental designs, and the *Randomized Controlled Trial* remains identified as the 'Gold standard' for such claims (Greenhalgh, Howick, & Maskrey, 2014; Swift, Langevin, & Clark, 2017).

However, what constitutes science and scientific knowledge in professional and policy terms (including official practice guidelines) at any historical turn can be seen to be a matter of political expedience and control (Friedson, 1970). Whether health research is funded by charitable foundations, through corporate investment, or by the State, decisions regarding funding do not necessarily support the ideal of a field shaped by best practice responses to real-world service users or client needs. Formal funding and publication decisions reflect prevailing ideas about what constitute worthwhile research topics and research questions, trustworthy knowledge and evidence within a given profession. These decisions are also contingent on value judgements made by bodies of individuals and groups, which are themselves selected and constrained by the institutions that support them (Friedson, 1994; Eikeland, 2012; McCurtin et al., 2019). With the increasing dominance of the market economy and the corresponding corporatizing of public institutions including universities, the gap between professional knowledge producers and the consumers of this knowledge has arguably become larger, yet also less visible (Lupton, 1995), and this has implications for gaps between research-based and practice-based knowledge.

Practitioners, as (knowledgeable) first-hand knowledge producers, have a somewhat more robust claim than institutional scientists to being engaged in emancipatory scientific knowledge production, grounded in their proximal, *in situ* connection with the world of practice. Here as well, claims can be made about the nobility of cause and purity of motive in pursuit of truth (and here too, knowledge developed in everyday practice can be portrayed by practitioners as equally value-free and incontrovertible as that produced by academic researchers). The knowledge production – and thus evidence-base – of the practitioner, and ultimately of the field of practice, is nevertheless equally constrained by the same institutional, political, and strategic priorities and imperatives imposed on the activities of non-practitioner researchers (Eikeland, 2012; McCurtin, Murphy & Roddam, 2019). These constraints on scientific research, on practice, and on citizens ('clients', 'patients', 'service users' or 'recipients'), combine with the persistent on-the-ground urgency of real individuals needing professional help in real time. Thus arises the equally urgent question for both practitioner and researcher in the field of speech-language therapy: how can research bridge the gap between practice-based evidence and *Evidence-based practice*?



Engagement and the gap

Van de Ven and Johnson (2006) offer a detailed presentation of what they call 'engaged scholarship', in a pluralistic approach to methods and methodology used in research on management and organizations that reverses the top-down privileging of scientific, formal-technical knowledge, and bestows the status of derivative on the practical aspects. They argue for a reflexive, critical, realist approach (Azevedo, 1997) that uses multiple models and methods, and acknowledges both the limitations on knowing (all knowledge is partial, and all knowledge is contextually and historically situated), and the fact that different models serve different points of view and the interests of different stakeholders in the research. They point to Kondrat's (1992) now 30-year-old review and her point that what is missing are empirical studies of knowledge from practice in terms of *knowing in practice*, rather than *knowledge for practice*. The use of the verb form here ('knowing in') highlights knowledge as being performative, processual, and intimately caught up in the untidy everyday reality of the context in which it must be realized, rather than a static, finished product ('knowledge for') that is made externally, then imported into the context of practice. With this emphasis on knowing over knowledge, the intrinsic embodiment of the context in which knowledge for practice must be useful and trustworthy also becomes harder to ignore.

These points bring us closer to two of the three 'pillars' of evidence-based research: quality research evidence, clinician judgement, and knowledge derived from the experiences and reflections of clients. McCurtin et al. (2019) refer to the general acceptance in speech-language therapy of some version of these three pillars, and argue that there is too little emphasis on, and specificity regarding, the second two of these pillars. Their approach to remedying this situation echoes the call to engaged scholarship above. They argue for a *Total Evidence and Knowledge Approach* (TEKA) that seeks to critically examine knowledge and expertise on which interventions are based, and for practitioner-clinician and client knowledge bases to both be part of this synthesis. Here, they are keen that while both implementation and knowledge translation goals will, and should, be served by this process, the critical and comprehensive synthesis and assessment of knowledge should be a systematic part of practice-improvement processes for the clinician. Their suggestions for what this should include, and how it can be systematized (thus also raising to visibility what might otherwise remain tacit or hidden in clinician and client-based knowledge) provide a good example of how practitioners can avoid remaining within a narrow focus on 'what works' or seems useful in dealing with a problem, or in defining research narrowly in terms of usefulness, with no recognition of how different ways of knowing and forms of knowledge are connected to theory (Eikeland, 2012).

Tacit and explicit knowledge

Engaged scholarship involves pluralist knowledge-building in which practical knowledge is produced by the subjective knower who operates from a position of engagement with, rather than distance from, practice and practitioners (Van der Ven & Johnson, 2006). Van der Ven and Johnson argue for engagement of both research and practical knowledge forms as presented in Aristotle's three categories of knowledge: *Techne* (instrumental, means-ends), *Episteme* (fundamental theoretical-analytical), and *Phronesis* (practical, how best to act in the situation, also toward ambiguous social or political aspects as they arise). They take their application of Aristotle's categories further by adding Habermas' distinctions between technical and practical knowledge that overlap those of Aristotle (Pezdek, Dobrowolski, & Michaluk, 2020; Van De Ven & Johnson, 2006), pointing out that Habermas "viewed practical knowledge as tacit, and embodied in action and technical knowledge as formal, explicit, propositional, and discursive" (Van de Ven & Johnson, 2006, p. 805). In contrast, the work of Latour (1986), Latour and Woolgar (1986), Polanyi (1962) and others describes how the tacit and explicit dimensions are present in both scientific and practical knowledge, as evidenced in their studies of scientists at work, which highlight the mixing of tacit and informal with technical-theoretical methods and practices. Latour and Woolgar (1986) introduce the notion of improvisation as the central process underlying scientific work-in-practice, a hard-to-define mesh of processes intimately connected with flow and creativity, but also with doing the right thing at the right moment. The latter requires technical skill and decisiveness supported by sound theoretical analysis and intimate engagement with the situatedness of the work of doing science, in what can be called the specific demands of the moment.

The word tacit means silent, and indeed, research reports and publications continue to remain largely silent about many of the messier aspects of doing the research that formal reports are based on, including the making-sense work of data analysis. There has traditionally been greater honesty about the non-linear (more organic) aspects of knowledge production in qualitative-interpretive research than in quantitative, positivist/post-positivist research accounts, though this belies the fact that statistical data can be just as unruly and bewildering as interview transcripts (Silverman, 1993). De Certeau's (1984) distinction between tactics and strategies provides another way of conceptualizing the distinction between formal-theoretical and tacit knowledge, or between Aristotle's 'episteme', 'techne', and 'phronesis' knowledge categories. De Certeau (1984) defines strategy as an expression of the "force-relationships" that become possible when a subject, a professional, a proprietor, a business, a scientific institution, or a field of practice consolidates power by becoming isolated from the environment (p. 36). The terms strategy and tactics are



familiar to us from everyday conversation, but they originate from the Chinese military strategist Sun Tsu's texts on the art of war, and the inherent tension between them points to how everyday practices are frames for intimate power struggles. Strategies are generated from within the place or location demarcated by this isolation, a space "that can be circumscribed as proper" (from the French *propre*; p. xix; a space of practice owned and under the control of an expert). They thus serve as the means for generating relations with the occupants of an exterior outside this official, proper space, such as clients, competitors, or objects of research. A 'tactic' on the other hand, is employed in response to a pragmatic, situated need, and is placeless – only appearing at the moment it is used. Tactics depend on timely cleverness (for example, a speaker's pragmatic 'trick' to stop stuttering in the middle of a sentence), whereas the strategic solution emanates from an institutional space that is timeless or outside of the ordinary moment-to-moment of everyday life (the professional discipline of speech-language therapy) and is a statement of the authority of this space to define knowledge outside, and above, its chaotic detail. Thus, a *strategy* for controlling stuttering is described in academic textbooks, professional practice guidelines and the research literature. Viewed from this latter perspective, our speaker in the example above can be seen by the with speech-language therapy to be employing an anti-stuttering strategy in releasing a block in the moment of stuttering by performing a pull-out. The tactical (from the ground up) approach to the person's stuttering remains invisible in the research literature. Conversely, visibility is bestowed on approaches similar to those taken by specific clients when these are gathered, generalized, and articulated by the field of speech-language therapy in terms of theory (top-down explanation) and thus presented as examples of a strategy.

However, conversational (and many other) everyday practices are largely tactical in nature, and thus cannot be viewed in isolation from the circumstances in which they occur (de Certeau, 1984, p. 20). A therapist-researcher can observe a tactic or group of similar tactics for dealing with stuttering, or collect descriptions of them, but to achieve the status of strategies for management of stuttering, these must be given presence (be made visible) by a representative of institutional authority (a therapist-researcher in the field) and reworked into the forms and language acknowledged by the institution. Without this crucial transformation, such tactics cannot exist (for the field), cannot be studied, and have no reality beyond that of the individual client in the moment of their usefulness. Strategies for treatment are generated from a formal-theoretical knowledge base, produced through research, and incorporated into the field of speech-language therapy. Tactics for coping, on the other hand, are what the client employs in everyday life-management when seeking help for specific personal difficulties with speaking. Furthermore, evidence-based

strategies employed by SLTs in their practice are those that emanate from formal research ('formal' because conducted by or under the auspices of a person with research qualifications and/or a research institution). It does not matter whether the research is practice-based or not – these strategies achieve their position in the field of speech-language therapy through being published in the scientific literature, cited by other researchers and practitioners, and presented at conferences.

The tactical discoveries of the client, by definition, do not have this institutional sanction: they are specific and individual – often remaining unknown to anyone other than the individual person – and have no established place outside of everyday life. The isolation of institutional disciplinary knowledge within a space all its own gives it the upper hand in relations between its representatives (practitioners and researchers) and their clients. This movement of an institution or field “splitting off the place of its own power and will from an ‘environment’” (de Certeau, 1984, p. 36) is one of Cartesian rationalization, best known as the ‘mind-body’ split in the medical sciences (Yardley, 1999, for example). The Cartesian notion of the mind in isolation from an external physical reality lies at the root of the Western European conception of knowledge ‘acquisition’, as the process whereby the rational, individual mind can apply systematic observation to deduce the nature of the material world, and in this way gain the ability to predict and control physical events in this material world (Yardley, 1999, p. 33). The environment from which speech-language therapy emerges is an everyday world that is “permeated and metaphysically infiltrated by the invisible powers of the Other”, that is, by the unknown difficulties and abilities of the client-individual presenting for therapy to the speech therapist-representative of the field. This environment is resistant to strategic control because it is complex, confusing, full of non-linear activity and unruly detail, and resists definition. The SLT stands with a foot, as it were, in both camps: the disciplinary-theoretical-institutional on the one hand, and the tactical everyday world of the clinic on the other. In the attempt to resolve the inevitable tensions of being in two camps, there is a temptation for the therapist to retreat, either by acquiescing to received institutional knowledge and method, thus risking losing sight of the individual speaker, or resorting to an attitude of ‘fixing’ technical problems in a way that loses sight of deeper theoretical understanding.

Regarding this problem, Eikeland (2012) points out that there is a difference between *praxis* and mere practice, in which clinical issues can be reduced to matters of the use value of both externally prescribed methods based on theory, and technical solutions to internally defined causes or problems. This problem-solving approach (whether from the top-down or from the ground-up, or both) keeps practice (and research on practice) within a superficial and fleeting present, in which the epistemological status of what is practiced remains obscure, or insufficiently recognised or



questioned. Praxis research on the other hand, involves the critical engagement of the practically acquired experience of a practitioner-knower, rather than a spectator-outsider observing from a contemplative, institutionalized, theoretical height, or a mere technician fixing problems as they present themselves (Eikeland, 2012). When practitioners perform praxis research, they are helping to bridge, to narrow, and ultimately to rework the epistemological gap between practice- and research-based knowledge. By deepening their relationships with both systems of knowledge they can create a multi-dimensional *nexus* for clinical and research work. This *nexus* of knowledge and ways of knowing forms both a central or focal point, and a means of connecting separate things in the sense of binding them together (as reflected in the 17th century origins of the word; Oxford English with Dictionary; Simpson & Weiner, 1989). For this to be successful, both the everyday details of treatment and research processes and contexts, and the overarching theoretical concerns of practitioners and researchers must be viewed as equally important and reciprocal elements.

The importance of embodiment in both research and practice

Concepts such as praxis and nexus, engagement, knowing, action, and tactics suggest the centrality of process, movement and interaction within practice and research, and thus the importance of embodiment for both. The clinical encounter is one of lived bodies, and the speaking, vocal voice as an embodied phenomenon is an obvious fact and topic of significance in the field of speech therapy (Gilman, 2014). Embodiment is also a feature of field research, although the consistent failure to recognise this fact in research reports is a reminder that the Cartesian mind-body division is still dominant within the health research field (Crossley, 2000; Ellingson, 2006). Embodiment is of course far more than a mere *feature*; rather it is the foundational and overriding condition of being for researchers, practitioners, clients, and participants. An embodiment perspective highlights the inherent complexity and non-linearity of research and practice and the phenomena of interest common to both. This involves recognising the inherent tensions between the strategic and tactical modes of understanding and acting in a way that does not force participants into a retreat from one camp to the other. As the field of speech-language therapy has become a sovereign, professionalized arena in which practitioners also do research, the engagement challenge is that of negotiating the gap between the knowledgeable expert practitioner and the knowing client – the one who lives in an intimate relationship with their (specific version of) speech/speaking challenge.

To be successful, SLTs must address the embodiment of the voice, not merely treat, or study the objectified, problematic voice in a body. Ellingson (2006) points

out that ‘the body’ – also that of the researcher, therapist, or client – is a site of knowledge production, and that whatever is ‘wrong’ with it (outside the normal) serves as an implicit referent for what is ‘right’ or correct (normal). Normativity is not a state, but a process in which “we are always responding to, and reinforcing, social power constituted in normative performance” (op. cit., p. 300), and perhaps nowhere is this made clearer than when one presents to a therapist for treatment for some problematic element of one’s embodiment. More than 15 years after Ellingson’s comment, social media, and constant surveillance (both voluntary and enforced) have made this performance a full-time preoccupation. What is ‘normal’ is both endlessly redefinable and equally impossible to obtain, despite attempts to police language, redact descriptions, augment images, and so on. However, the missing body of the researcher in the research literature (or of the therapist in the clinical encounter) is an absence that maintains the superior position of the unseen expert – one who is not troubled by a disordered body (Ellingson, 2006). As Thomson (1997) puts it, the unseen researcher-expert represents “the ultimate control group” of normal functioning.

Outside of the formal literature however, practice, research and everyday life are arenas of embodied performance. In positive, ordinary face-to-face interactions, participants address each other as specific ‘someones’, and offer one another the feeling of being met and seen, however fleetingly; in such meetings, participants communicate reciprocal respect for the (different) contributions and interests of one another in a way that imparts a feeling of liveliness that can be moving and transformative, however apparently trivial the connection appears from the outside (Skatvedt & Costain-Schou, 2008, 2010). Often, what is communicated in such moments is done so without words or much action (that is, without theory, strategy, techniques, or method), and participants encounter one another with all their differences intact, and as concrete persons (Asplund, 1987) rather than abstract members of society (as professional, or client) (Skatvedt & Costain Schou, 2008). Therapeutic change can only last or be capable of moving (motivating) a person to a new and more empowered position (functionally, emotionally, or biographically) if the form it takes is relevant for this concrete person. A dynamic approach to evaluating and developing knowledge from research and practice has several features: it acknowledges the interdependence of embodied personal or individual realities with abstract social or theoretical perspectives; it values the commonplace interaction as meaning-bearing and generating; it acknowledges the other (the person who stutters) without seeking change as a prior condition of engagement; and it recognises that otherness is a two-way street (Skatvedt & Costain Schou, 2010).

By recognising their own embodiment as intrinsic to research and to practice, therapists can develop greater sensitivity to the knowledge production contribut-



ed by individuals they see in the clinic, and greater honesty in terms of how they, as experts, know what they know. Greater engagement of the therapist-researcher in the ambiguity of lived experience than in the production of fixed categories can enrich understanding and open new ways of seeing and acting. Such engagement also demands a high level of reflexivity and discipline in the achievement of an attitude of dynamic stability between the roles of theoretician and practitioner. Categories and frameworks of knowledge can then be viewed as part of the ongoing research conversation rather than as defining a final theoretical destination, and this will bring greater transparency to the development and evaluation of theory.

Pragmatism and the contextual nature of phenomena

In any field of clinical practice, knowledge-producing processes of all kinds must take account of the tensions and constraints produced by the embodied and socially lived reality with which they seek to grapple (a tactical word) and to explain (theorize). Haigh et al. (2019) describe the four categories that underpin any conception of knowledge and knowing:

- a) ontology – one’s understanding of the nature of reality and what can be known about it
- b) epistemology – understanding the nature of knowledge, the “getting to know” process, the relationship between the person who seeks to know and the knowledge they construct, and the criteria for making claims about knowledge
- c) methodology – the approach taken to the construction of knowledge; and
- d) axiology – the influence of values on the knowledge that is acquired, and how it is acquired.

A coherent set of views in relation to these four considerations constitutes a research paradigm (pp. 11–12). Methodology relates the conduct of research to all aspects of a scientific paradigm – its notions of reality, of knowledge as product and process, and of the values that influence these. The method, or the practical steps taken in a research study (i.e., sampling, data collection, analysis), is informed and guided by this larger philosophical stance. Research findings are only interpretable when the study provides a clear statement of the paradigmatic assumptions upon which it has been built.

Much scientific knowledge has relied on a pluralistic approach that combines aspects of pragmatism and contextualism (Benton, 2011; McLeod, 2018; Wampold, 2015). Pragmatism can be regarded as a position of epistemological compromise toward scientific goals and principles, and methodological pragmatism is compatible

with the constraints of the clinic and clinical research as it recognises the demanding realities of social settings. Ramnerö and Törneke (2008) describe the pragmatic research tradition as one in which the value of knowledge is determined by its real-world clinical usefulness. They identify two central factors for describing, understanding, and influencing behaviour: the *function* of a behaviour, and the *context* within which it occurs – if one can understand the function of a behaviour, one can understand its purpose in producing specific consequences, and these always occur in a context (2008, p. 8). Their concept of contextualized consequences can provide us with a rubric for assessment of the value of practice interventions *in situ*, but also from a more meta-, or evidential-, research perspective that avoids a narrow definition of usefulness. Context and contextualization, like embodiment, are not mere features or neatly operationalized boxes to tick, but constantly shifting and evolving conditions and processes, both material and ideological.

Pragmatism is often associated with designs which involve mixed methods, where the qualitative elements of the research ask ‘what’ and ‘how’ to explore more deeply and gain insight into underlying issues, while the quantitative elements ask ‘how many’ and ‘how strong’ to measure, predict and/or correlate (Dures, Rumsey, Morris, & Gleeson, 2011). Historically, qualitative and quantitative approaches have been underpinned by fundamentally different assumptions about the nature of reality, and ways of knowing and understanding (Denzin & Lincoln, 1994). These differences are no longer drawn as sharply in current research practice; distinctions are made instead between ways of using the texts and images of qualitative data, and the statistics of quantitative data. The mixed-method approach is, therefore, able to go some way toward meeting the multi-dimensionality of everyday lives. This brings it into line with a pluralistic view of research in which multiple conceptual frameworks (from the full spectrum of ‘stakeholders’ in any context under investigation) are deliberately brought to bear on a research problem or question (Van de Ven & Johnson, 2006). Research design and data collection methods should be related to the specific research questions, rather than based on a predetermined preference for paradigmatic qualitative or quantitative approaches (Dures, 2012).

In taking up a critical realist perspective, pluralism adopts a tempered (compromise) approach to truth and the ability to achieve complete understanding of a phenomenon (Bhaskar, 1989). This perspective acknowledges that while there is a real world outside the consciousness of the researcher to be studied, scientific knowledge is inevitably structured through socio-cultural language systems, and that value-free observation is an impossibility (Azevedo, 1997). A reflexive and critical coordination of multiple models and perspectives can expose robust features of reality and distinguish them from those based solely on one model or framework (Van de Ven & Johnson, 2006). The use of accounts of reality based on a single idea,



on the other hand, can lead to situations in which an overarching global theoretical perspective fails to be related to the complex detail of the dynamic real-world situations to which it is meant to be applied. For example, Haigh, Kemp, Bazeley, and Haigh (2019) describe how conceptualizations of the relationships between human rights and social determinants of health remain limited by both lack of clarity and ambiguity concerning how these rights and determinants interact with, and affect, each other. Even though global initiatives such as the WHO Commission on Social Determinants of Health have promoted the securing of human rights as central to addressing imbalances regarding these social determinants, there have been few actions taken which specifically use a human rights approach to identify the issue.

Contextualism highlights the importance of the concept of the act in context, where any event or ongoing activity must be seen and analysed in its current environmental or historical context (Ramnerö & Törneke, 2008). Benton (2011) points out how the contextual world-view mirrors ideas articulated in the early pragmatism of American philosophers such as Charles Sanders Peirce and William James, as well as its later formulation by John Dewey, among others. Contextualism emphasizes the practical application of ideas through implementation, to test the functional value of human experiences of knowledge, concepts, meaning and science in real world settings (Benton, 2011; Ramnerö & Törneke, 2008; Swift et al., 2017). In contextualism, truth claims cannot be made outside of the environmental context: analyses are judged true or valid only insofar as they lead to effective action or achievement of some goal in the context concerned. *Functional contextualism* emerges from contextualism (Ramnerö & Törneke, 2008), and is a holistic approach in which the whole must be understood in relation to context, rather than assembled retroactively from discrete elements (Hayes, Strosahl, & Wilson, 2012). In functional contextualism, the truth is regarded as local and pragmatic, and what is truth for one person does not need to be the truth (or the same truth/truth in the same sense) for another person. When clients approach a clinic, they usually want to change something in their lives, and whatever best serves this purpose in the helping process can be considered the truth (Egan, 2014; Ramnerö & Törneke, 2008). This pragmatic definition of truth value in knowledge production for practice contexts is a central concern in the production of clinically relevant scientific work in areas such as the field of fluency disorders.

Causality in a systemic perspective

The pragmatic focus above acknowledges the local and specific nature of truth or validity in the clinical context and locates assessment of outcome with the client and clinician. However, as mentioned earlier, a danger here is the narrowing of the

clinical and research gaze to simply ‘what works’ in relation to specific local problems, or regarding specific methods, strategies, and/or techniques. This neglects the central overarching aim of knowledge production: that of *explanation*, which is a pragmatic word for theorizing. Strauss and Corbin (2015) for example, in their version of Grounded Theory coding processes for qualitative data, emphasize the importance of linking local, specific details from within the data to broader topics or themes through a constant comparison process in which the analyst uses hypothesis-testing in the form of questions posed to the data, and eventually to the emerging theoretical framework constructed by the researcher. This is an approach designed to ground theorizing in the data that views causation in terms of the inter-dynamics involved in complex social processes (such as those of the treatment clinic, or in the life of the client), This view emphasizes that a phenomenon is usually an interaction between several factors rather than the result of a singular, discrete event, substance, or technique. With regard to complex human systemic processes, what causes what is likely to be emergent and interactive rather than linear, and the variability and unpredictability of stuttering suggests that it can be regarded as a ‘complex system’ (Packman & Kuhn, 2009; Ward, 2018). In cases of complex system phenomena and intervention, there are many factors that can contribute to the results or outcomes of clinical practice, and those of research on clinical practice and therapeutic change. Cartwright and Hardie (2012), Kvernbekk (2016), Lambert (2013), Wampold (2015), and Anjum, Copeland, and Rocca (2020) have all tried to describe systemic causality as the sum of several interacting factors, both contextual and individual-specific. When an intervention is implemented, outcomes will be affected not only by the intervention itself, but also by these interactions.

Lambert’s (2013) research on psychotherapy outcomes grouped the factors contributing to successful therapy into a pie chart of four main factors, and determined the percentage of change in clients as a function of these: client/life factors (qualities of the client or the environment) 40%; shared factors (empathy and the therapeutic relationship) 30%; expectation (client’s expectations of help or belief in the therapy) 15%; and professional techniques (factors unique to specific therapies, and tailored to management of specific problems) 15%. In an alternative conceptualization, Cartwright and Hardie (2012) and Kvernbekk (2016) used the metaphor of a “causal cake” whose ingredients include the intervention and other relevant factors, with the intervention then interacting with these other ingredients to produce the outcome (Cartwright & Hardie, 2012; Kvernbekk, 2016). This metaphor indicates that no single treatment approach by itself can constitute a therapeutic process, just as one ingredient alone cannot make a cake. It also highlights the possibility that, just as different combinations of ingredients may create a variety of good- (or bad-) tasting cakes, different combinations of factors may result in a variety of treatment outcomes.



Manning (2010) and Plexico, Manning, and Dilollo (2010) describe other models, such as the *Common Therapeutic Change Principles* model (CTCP) and the *Contextual Model* (CM), which to some extent parallel the “causal cake” metaphor and Lambert’s pie chart. The CTCP consists of what Goldfried (1980) describes as “somewhere between theory and technique which, for want of a better term, we might call clinical strategies” (pp. 99–95); such “clinical strategies” are therapeutic techniques and clinical procedures at the lowest levels of abstraction. The premise of the CM model is that “the benefits of psychotherapy accrue through social processes and that the relationship, broadly defined, is the bedrock of psychotherapy effectiveness” (Wampold, 2015, p. 50). The model explicates three main pathways that promote change through therapy: 1) a real relationship between the client and clinician; 2) the creation of expectation through treatment rationale; and 3) therapeutic tasks and actions that correspond with that treatment rationale. The clinician and client have to establish an initial bond before these pathways can be employed (2015, pp. 53–54). The CM provides no estimation of the degree of influence exerted by different factors on treatment outcomes, as in Lambert’s pie chart (2013). Rather, it provides a more inclusive framework by allowing for the possibility that the relative influence of different factors may vary dependent on multiple additional elements. Such elements can include aspects of the speech impediment itself, general contextual variables, within- clinician or client variables (those pertaining to the personal processes of clinician or client) and between- clinician/client variables (those pertaining to the clinical relationship or interaction).

Dispositionalism and causality

Taking a complementarity perspective toward knowledge acknowledges the partiality of situated knowledge, the validity and scope of which will necessarily be constrained by the local contexts in which it is produced (Van der Ven & Johnson, 2006). Within such a pragmatic perspective, it is nonetheless important to link situated accounts together in meaningful ways through dialectical exploration of their similarities and differences, to create statements of cause and effect in the form of explanations or theories. One way to approach causality that recognises the limitations of producing linear accounts of cause in complex processes, is to adopt a dispositionalist position (Kerry, Eriksen, Lie, Mumford, & Anjum, 2012; Low, 2017). According to dispositionalism, a *cause* is some aspect of a situation that tends towards its *effect* with stronger or weaker intensity. The tendency for a causal factor to have a particular effect is not defined in terms of statistical regularity, but in terms of a real disposition toward the effect, or its causal power.

Each causal process must be viewed in terms of causal complexity, context sensitivity and causal singularism, and can include a unique combination of dispositions. In this view, there is no perfect method for establishing causality; rather, effect needs to be understood as the result of the intrinsic, interacting dispositions (Anjum et al., 2020). A dispositional account emphasizes the importance of personal background conditions to the understanding of cause and recognises that the intervention is not the only factor influencing outcomes. According to Kerry et al. (2012, p. 1008), “causation is what is added to a situation that interferes and changes the outcome”, and within the framework of dispositionalism, the added factor is causally powerful only when it is causally related to at least some of the factors already present. Kerry et al. (2012) state that the greatest causal work can be seen in single-case studies, where the real nature of causation as non-linear is witnessed as “the interaction between causal agents; subtractive and additive forces tending towards and away from an effect” (2012, p. 1011). The effectiveness of a particular clinician, with a particular client, at a specific time-point, will be determined by this movement of forces in relation to possible effects; for example, an individual’s fear of evaluation might influence avoidance behaviour, which again might hinder speaking ability in social settings or have the consequence of social withdrawal. Any discussion of causality must aim to identify such factors and describe their relationship to one another and to the outcome of an intervention, whether in the clinic or in the context of a research study.

Multiple components influence therapy outcome in stuttering research

The stuttering literature often divides stuttering treatment into two main traditions based on apparently divergent theoretical foundations, and further distinguishes it on the basis of behavioural or affective treatment goals, procedures and structure (Guitar, 2014; Shapiro, 2011). At the same time, integrated approaches highlight the principle that stuttering treatment should be tailored to the needs of each person (Guitar, 2014; Logan, 2015; Shapiro, 2011; Ward, 2018). Despite this apparent agreement about the importance of the client’s own views, the literature continues to describe clinicians as divided into two dichotomous groups: those working with fluency shaping, and those using stuttering modification approaches. An illustration of this feature of the professional literature on stuttering is reflected in the title of an article representative of this debate: ‘What do people who stutter want? Fluency or Freedom?’ (Venkatagiri, 2009). An important question is whether this binary distinction is still valid in current clinical contexts, and the extent to which such an approach reflects real consensus within the practice field of fluency disorders.



Research on the efficacy of interventions for stuttering is of primary importance for future clinical development. Baxter et al. (2015) found that individual variability in response to different stuttering approaches is substantial across therapy studies, and there is a lack of research on stuttering approaches or specific therapy elements shaped by variations in response and effectiveness in the individual case. Especially within stuttering research, more work is needed regarding the challenge of tailoring the right approach to each person's individual needs (Hayhow, Cray, & Enderby, 2002; Sønsterud, 2020; Sønsterud, Halvorsen, Feragen, Kirmess, & Ward, 2020), and generating empirical data regarding which client will gain lasting benefit from which approach (Ward, 2018, p. 301). How, and to what extent, intervention outcomes are related to the communication and daily living of PWS is unclear in most studies, and there is a need to recognise their different subtypes and "deal with them in differential ways" (Nye et al., 2013, p. 930). The factors which an individual who stutters may view as significant in therapy are unlikely to be represented in stuttering intervention studies and have not been demonstrated empirically (Bothe & Richardson, 2011; Ingham, Ingham, & Bothe, 2012). In this regard, the individual-in-context perspective is highly relevant, and a key concept within it is that of *personal significance*. Inviting and actively utilizing the person's own evaluations is an essential element of *Evidence-based practice*, including treatment for stuttering (Bothe & Richardson, 2011; Ingham, Ingham, et al., 2012). This highlights the value of flexible treatments that can be adjusted to address aspects that are especially significant to the individual, and within this frame of understanding, it is relevant to assess success in terms of changes in behavioural, social, and emotional aspects – not simply the eradication of stuttering or increased fluency of speech.

Research in the field of psychotherapy has demonstrated that individually-centred treatment and self-managed training can be efficiently implemented by a trained clinician (for example, Benum, Axelsen, and Hartmann 2013; Nissen-Lie et al. 2013; Oddli and Halvorsen 2014; Oddli and McLeod 2016). Clinical experience and research on stuttering have similarly demonstrated that quality of life and psychological health can be significantly improved in adults who stutter when therapy is tailored to their specific needs (Baxter et al., 2015; Beilby, Byrnes, & Yaruss, 2012; Craig, Blumgart, & Tran, 2009; Langevin, Kully, Teshima, Hagler, & Narasimha Prasad, 2010) yet, to date, there has been little focus on the multiplicity of factors which can potentially influence treatment outcomes. Aiming to further increase knowledge in this area, the work of Sønsterud and colleagues (Sønsterud, 2020; Sønsterud, Feragen, Kirmess, Halvorsen, & Ward, 2019; Sønsterud et al., 2020; Sønsterud, Kirmess, et al., 2019) investigated some of these factors in greater detail from a context-sensitive and individualized perspective. Factors that influence therapy outcome were found to be personal characteristics (including motivation and expectations of a positive

outcome) (Sønsterud, 2020); the quality of the working alliance (the relationship between client and clinician) (Sønsterud, Kirmess, et al., 2019); and the intensity of home-based training (Sønsterud et al., 2020). Interestingly, in this work the therapeutic approach in this work, the therapeutic approach itself – *Multidimensional Individual Stuttering Therapy* (MIST) – was also seen to be influential, and the extent to which this was the case was clearly identifiable using this research paradigm.

Just as in psychotherapeutic practice, joint clinical decision-making principles and a stable and positive working alliance can contribute to successful outcomes in speech-language therapy (Lawton, Haddock, Conroy, Serrant, & Sage, 2018; Lawton, Sage, Haddock, Conroy, & Serrant, 2018; Manning, 2010; Sønsterud, Kirmess, et al., 2019). The correlation between working alliance and treatment outcomes has been examined meta-analytically in psychotherapy several times, with only a slight variation in overall correlation ($r = .21$ to $r = .29$) (Flückiger, Del Re, Wampold, & Horvath, 2018; Horvath, Del Re, Fluckiger, & Symonds, 2011). These studies, and that of Sønsterud, Kirmess, et al. (2019), confirm that the working alliance is an important contributor to treatment outcomes, but the latter authors also highlight the presence of additional influential factors. Based on a meta-analysis, Del Re, Flückiger, Horvath, Symonds, and Wampold (2012) found that within-clinician variance in the working alliance in psychotherapy appears more important than within-client variance in producing improved client outcomes. Both forms of variance affect client contributions, as well as interaction between the clinician and client. Research further confirms that the variance between clinicians is often greater than that between different treatment modalities (Del Re et al., 2012; Goldfried, 2014; Lambert, 2013; Wampold, 2015), indicating that the choice of clinician potentially has a greater influence on treatment outcome than the choice of treatment approach. This view is echoed in the work of Bloodstein, Bernstein Ratner and Brundage (2021) who argue that “[...] to benefit best from therapy, the first step is not to find a specific “best” therapy, it’s to find a good clinician – one with a broad skill set and one that the patient/family can establish a good working relationship with” (p. 416).

How do we measure therapy outcome, and who defines ‘success’?

In line with a democratic stakeholder perspective, there is a need for clearer definitions of exactly what an improvement or therapeutic outcome consists of, and for whom (Bernstein Ratner, 2005). In their meta-review, Baxter et al. (2015) conclude that a significant proportion of participants benefit from a range of different types of intervention. Accordingly, Connery, Galvin, and McCurtin (2021) examined a diverse range of stuttering treatments and found no significant pooled differences between



interventions and comparator groups in improved communication and psychosocial functioning. Baxter et al. (2015, p. 688) claim that, although both the range of interventions and volume of research have grown considerably, the evidence remains unclear as to what sort of client will benefit from which program (Baxter et al., 2015). A pluralist approach, as outlined earlier, lends credence to the view that people who stutter are the real heroes and heroines, and that the SLT has the lesser role of guide, or provider of resources (McLeod, 2018). There seems to be a clear need to acknowledge client responses to a greater extent, and to integrate this perspective into research, although current clinical guidelines commonly recommend stuttering therapy that is based on what has been proven to work best for most clients (Anjum et al., 2020). If we instead consider that all clients are different, and that causation is essentially contextually derived through a dynamic process, there then may be no 'average clients', and thus no therapy approach that 'fits all'. In many ways, the overall clinical challenge might be more related to how SLTs can adapt and integrate elements from an intervention, rather than the selection of a particular therapy approach.

The APA Presidential Task Force on *Evidence-Based Practice Policy Statement* by the American Psychological Association (APA, 2006) is the result of a collaboration which includes scientists and practitioners from a wide range of clinical fields, health services researchers, public health experts and consumers. Many clinicians and researchers within health education in Norway have aligned themselves with the APA policy statement (Rønnestad, 2008). The statement includes the definition of *Evidence-based practice* as practiced in psychology (EBPP) as the integration of the best available research with clinical expertise in the context of client characteristics, culture, and preferences (Levant & Hasan, 2008; Rønnestad, 2008). As Ratner (2005) points out, *Evidence-based practice* in stuttering therapy involves integrating best evidence, clinical expertise and client values, and accepting that the therapist must be prepared for several different outcomes which will require a broader definition of therapeutic progress and goals (p. 265).

Robey and Schultz (1998), among others, suggest making a distinction between efficacy and effectiveness, in that efficacy studies evaluate therapy under optimal conditions or laboratory settings, while effectiveness studies evaluate therapy under clinical conditions or in daily base settings. If a therapy works under optimal conditions, the natural next step is to test it in a daily life setting. Despite their status as the 'Gold Standard' for tests of efficacy, *Randomized Controlled Trials* (RCTs) have limitations when they are used to evaluate therapy provision for a particular client group: they may be more difficult to conduct in other areas of medical intervention, and the heterogeneity of groups as well as of the therapy approaches used makes it unlikely that significant results can be obtained that can provide useful information (Pring, 2004).

The APA statement acknowledges the way in which different forms of research contribute specific forms of valuable knowledge. However, when considering the impact of the dimensions of the statement, there are several caveats. Assessment of a therapy as effective can be made when the effects of the intervention are large enough to be of practical value to the participant or society; this means that a cause-effect relationship must be demonstrated (Gast and Ledford, 2014, p. 86). However, in scientific work on stuttering, there are few studies which involve a focus on what the client regards as effective therapy, and few studies of effect within the person's own environment. Clinical research on humans involves complex subjects who interact in complex ways with their (complex!) environments, all of which involve factors which can interfere with therapy processes and outcomes. Consideration must also be given to the person for whom the treatment study is being conducted, including whether the treatment study framework or treatment which the clinician or researcher regards as optimal is similarly suitable for the person who stutters. Furthermore, in real world situations, there are often limitations on resources, including that of time, and these may obscure or prevent an effect from becoming visible.

In clinical work, it seems an obvious point that therapists and researchers must consider stuttering from the perspective of the people who do it, and many PWS benefit from a mixture of behavioural and emotion-based approaches (Ward, 2018). Current stuttering therapy is usually based on the principle of joint decision-making between the PWS and the SLT. Improvement of the person's perceptions of their own speaking ability and confidence in communication are seen as important targets. According to the *International Classification of Functioning, Disability and Health* (ICF) (World Health Organization) (WHO, 2018), a person's ability to actively participate in life and their quality of life are central concerns in therapy. In line with the APA statement, an aim of stuttering therapy that should be considered fundamental is the identification of tasks, strategies, and therapeutic elements that function practically for a client at a particular point in his or her life, and the success of goal-led therapy depends on whether the client and the clinician are mutually engaged in constructing a meaningful path together. This path must be one of shared decision-making about tasks and personal goals, and involves the clinician and client exploring available possibilities and combining elements in a way that best fits the client's goals and preferences (Manning, 2010; Sønsterud et al., 2020; Sønsterud, Kirmess, et al., 2019). A central question for both clinician and client is: how is stuttering influencing life? For example, how is Chris interacting in real-life settings? Is he able to talk on the phone, join friends at the pub, or be actively involved in educational- or work-related meetings? Is he actively involved with his family, for example, by arranging birthday parties and being able to tell stories and



read aloud to his children? Research and clinical experience suggest that a person's social functioning and degree of avoidance behaviour are significant factors affecting therapy outcomes.

With a clinical focus on enlisting clients' own functional analysis across self-selected parameters of personal significance, PWS can be helped to become active agents and researchers in their own communicative contexts, and it is arguably this effect that has the greatest potential for securing lasting positive change. Within this perspective, it is emphasized that clinical research on the effectiveness of therapy approaches must be supplemented by research on the therapeutic process, including the role of the working alliance (Rønnestad, 2008, Sønsterud et al., 2019). In a collaborative manner, the client and therapist can engage in observation of client communication as it is lived every day. This collaborative space can be used to gain a sense of the possibilities that exist for improvement of concrete skills such as overall speaking ability, and to pursue larger goals relevant to life quality. The idea that clients decide what constitutes successful therapy is highlighted in the working alliance literature (Flückiger et al., 2018; Nissen-Lie et al., 2013; Nissen-Lie, Monsen, & Rønnestad, 2010; Nissen-Lie, Havik, Høglend, Rønnestad, & Monsen, 2015; Oddli, Nissen-Lie, & Halvorsen, 2016; Wampold, 2015, Sønsterud et al., 2019). Relevant and specific quantitative and qualitative assessments for measuring the therapeutic alliance, particularly from the client's perspective, are needed to explore this concept more fully (Sønsterud, Kirmess, et al., 2019). The importance of a strong working alliance between clinicians and clients and how the quality of this alliance may influence therapy outcome is described in greater detail in chapter 9.

Challenges of outcome research and retaining the three pillars of the evidence base

Although there is a substantial body of knowledge about the assessment of the efficacy of therapeutic approaches to stuttering (Bothe, Davidow, Bramlett, & Ingham, 2006; Nye et al., 2013), the evidence base is weakened by the poor methodological quality of many studies, high dropout rate among study cohorts, small sample sizes, lack of long-term follow-up, and occurrence of relapses (Baxter et al., 2015; Bothe et al., 2006; Ingham, Bothe, Wang, Purkhiser, & New, 2012). Furthermore, the results of evidence studies point in multiple and sometimes divergent directions. Intervention studies, particularly longitudinal studies, are demanding and vulnerable to participant dropout or difficulties with recruitment of samples of a sufficient size (Baxter et al., 2015; Bothe et al., 2006; Nye & Hahs-Vaughn, 2011; Sønsterud et al.,

2020), although they are needed to explore the long-term impact of an intervention. In studies of treatment elements, consistent problems are also created by continuing lack of conceptual clarity or insufficient provision of information (Baxter et al., 2015), while in the stuttering field, prolonged speech and speech restructuring therapy are regarded as standard or traditional treatments for adults who stutter (Bothe et al., 2006; Ingham, Bothe, et al., 2012; Neumann et al., 2019). In our own clinical work, however, we recognise that the choices many clients make do not always fit neatly within these paradigms. Indeed, the evidence base is limited by factors such as publishing bias and an over-emphasis on the concerns of previous research, and these limitations serve to illustrate some of the main challenges to its expansion. Furthermore, significant challenges remain of how to define positive therapy outcomes when interpreting study results. The risk of confusing statistical significance with genuine clinical significance is always present (Alm & Dahlin, 2015; Finn, 2003; Simmons, 2011). Both qualitative and quantitative research approaches are required to fill the gap between practice-based evidence and *Evidence-based practice*. Everard and Howell (2018), for example, examined the use of a stuttering modification approach with a group of adults who stutter, and described the need for more research from the ‘consumer perspective’, where client perspectives are elicited as data and are part of the evidence for efficacy.

One way to incorporate the three perspectives of *Evidence-based practice* is to locate the concept of evidence in a more context-sensitive frame (Manning, 2010; McLeod, 2018; Oddli et al., 2016; Swift et al., 2017; Wampold, 2015, Sønsterud et al. 2020). Swift et al. highlight the usefulness of critical realist evaluation (CRE) within individual contexts in speech-language therapy (2017). CRE is based on the principle that a behavioural intervention cannot be evaluated without considering the context in which it is provided (ibid.) The authors point out that RCTs by their very nature may sometimes ‘wash out’ individual factors and contextual elements that might influence therapy outcomes. Baxter et al. (2015) and Swift et al. (2017) state that there is a need for greater flexibility and creativity in support and clinical practice; and clinical practice; there is also a need to consider *Evidence-based practice* in stuttering therapy in the context of ideas generated from clinical research. For example, Haaland-Johansen (2007) describes how SLTs should ground their work in existing theory, research, knowledge and practitioner experience, but that it is in the encounter between the client and clinician that *Evidence-based practice* is created. Greenhalgh et al. (2014) argue that although research has produced many benefits, it also has limitations: “There is a lack of discussions on how to interpret and apply evidence to real and the sharing of collective knowledge and expertise” (p. 5). The authors go on to describe how the challenges of self-management are not always about making choices about type of therapeutic approach or technique,



but rather are about the practical and emotional work involved in implementing these choices, and evidence-based guidelines might not always map to individual needs and/or complex multiple morbidity (Greenhalgh et al., 2014) and offer an agenda for the 'movement's renaissance' in terms of a refocusing on providing useable evidence that can be combined with contextual and professional expertise, so that individuals can engage in optimal treatment. They also claim that real *Evidence-based therapy* has the care of individuals as its top priority: the best course of action for the person, in these specific circumstances, and at this particular point in their condition. This perspective is shared by several authors (Kelly, Heath, Howick, & Greenhalgh, 2015; Kerry et al., 2012; McLeod, 2018; Wieten, 2018) and mirrors the ideals of pluralistic therapy (McLeod, 2018), and those espoused by Bothe and Richardson (2011), as well as Ingham, Ingham, et al. (2012). In summary, there appears to be a dichotomy between concerns described in the theoretical research literature and those of clinical practice, but also a shift toward recognising the importance of incorporating ideas about *Evidence-based practice* into a context-sensitive and individualized approach to treatment.

Robey and Schultz (1998) outline a five-phase model of clinical outcome research that addresses many of the issues discussed above. In Phase 1, the focus is on showing that a potential therapeutic effect of an intervention exists, along with no harmful side effects. Evidence in this initial phase is drawn from clinical reports and experimental investigations using small group and single case studies. Positive results indicate that a therapy deserves further investigation. In Phase 2, attempts are made to define how the therapy works. Decisions are made about which clients are suitable for the therapy, and exclusion criteria are defined to guide their selection. Outcome measures are selected, and the duration of therapy and its method of delivery is determined. In Phase 3, large-scale efficacy studies are carried out to obtain stronger evidence that a therapy works. In Phase 4, targeted effectiveness studies are conducted to assess whether the treatment works clinically. Efficacy studies may continue to define more precisely those clients who may benefit. Variations in the treatment and its delivery are explored, with the aim of maximizing its effects, and meta-analyses of previous studies may be conducted. In Phase 5, effectiveness studies continue to determine the cost effectiveness of the treatment and assess consumer satisfaction and the treatment's effects on quality of life, if not studied previously. This five-phase model addresses the concerns of, for example, Greenhalgh et al. (2014) regarding social differences and human rights, and Swift et al. (2017) in providing detailed contextual definitions of efficacy and outcome.

Reflections on 'optimal' research designs in stuttering therapy

Despite the good intentions of *Evidence-based practice*, there may still be a significant gap between *Evidence-based practice* and practice-based evidence in stuttering therapy (Bernstein Ratner, 2005; McCurtin, Murphy, & Roddam, 2019). It is possible to go further toward narrowing or re-working this gap through improving the design of studies of stuttering therapy. There is a body of research demonstrating that most therapeutic approaches to stuttering reach the level of statistical significance in cases of positive outcome (Baxter et al., 2015). There is clear evidence that most stuttering programs and types of therapy do work, or at least may benefit some people who stutter. At the same time, there are personal variations regarding response to these interventions. A central point is to recognise that results are shaped by the specific perspective and specific questions which are addressed in a study or a treatment program. Given the lack of client-specific evidence regarding effective therapy, a good starting point may be to explore issues and therapeutic approaches that matter most to people who stutter. There are many reasons to do research, and there appear to be good reasons for having multiple purposes in a single research project (Tashakkori & Teddlie, 2010). Goals for therapy studies include prediction of outcome, generation of new knowledge, exploration of personal and/or social impacts, measurement of change, and development of greater knowledge and understanding of themes identified in previous research.

A variety of designs are currently in use in the evaluation and improvement of stuttering therapy and outcomes. Design choice should depend most on the aim to contribute sound research-based evidence; thus it is important to choose research methods with the best suitability for answering specific research questions. Research design shapes data collection, and the careful selection of a design can help the researcher to gather and analyse the data more effectively, which in turn aids production of good answers to the research questions. Although RCTs can be a useful design for research on speech-language therapy, they are usually challenging to conduct in an optimal way within this field (Pring, 2016). There are many causally relevant factors which can be excluded from the results of RCTs, such as negative outcomes, risk groups, personal variations, and useful details about the intervention and it is important to take this into account when interpreting results from RCTs and utilizing the information they provide in decision-making (Pring, 2004). Such limitations should therefore make us more cautious about applying the results of RCTs universally and unconditionally. The best possible RCTs might show which of the known interventions benefit the greatest number of people, but there is no treatment policy that automatically follows from such a result. Robey and Schultz (1998) point out that if a researcher really wants to maximize utility



and make a considered design choice, then a choice other than the RCT may be a better course of action. In research which incorporates the possibility of exploring causal mechanisms and collecting information about local contexts, the more useful design choice is one that can provide more detail and more specific answers about effectiveness within a multiple case-study perspective, for example.

Any observation can be 'biased' in the sense of being too one-pointed or narrow, for example (it is beyond the scope of this chapter to discuss the issue of bias in greater detail), and all observation is theorized – there is no such thing as an unbiased observation (Azevedo, 1997). Thus, science requires replication, which means that other researchers in other settings with different samples should attempt to reproduce the research. If the results of this replication are consistent with those of the original research, there can be greater confidence in the hypothesis supported by the original study (note that replication does not prove results to be true; rather, successful replication increases credibility of results). It is essential to successfully replicate studies before claims of validity and reliability can be made. To establish external validity, a) research results need to be applied to a range of different settings and populations; b) the settings need to be specified and strict inclusion criteria applied to ensure transparency regarding participant and clinician factors; c) therapy interventions should be clearly defined and described in ways that allow replication; and d) clinicians should be trained in the use of the therapy to standardize its administration. The results of a study should gain acceptance if they are repeatedly supported in subsequent studies, and if they appear to account for the observations of several different researchers.

Guidelines exist for both randomized and non-randomized therapy studies to improve the quality of reported information in the research, for example, the *Consolidated Standards of Reporting Trials* (CONSORT) (Hemming et al., 2018), or the *Template for Intervention Description and Replication* (TIDieR) (Hoffmann et al., 2014). Stuttering is a complex disorder, and its evaluation and treatment require a comprehensive approach, such as for example the *Total Evidence and Knowledge Approach* (TEKA) of McCurtin et al. (2019). McCurtin and colleagues have developed an intervention evaluation approach which better supports explicit knowledge production to reflect the range of types of evidence and knowledge within therapy and expand existing guidelines and standards. The authors state that TEKA fosters clinical ownership of, and academic/clinical partnerships in, treatment evaluations, and that a more grounded clinical understanding of therapy should be incorporated more overtly into formal evaluations and clinical decision making (McCurtin et al., 2019). Positivist research designs alone are insufficient to fully reflect the effectiveness, impact, and client experience of complex interventions for heterogeneous populations. McCurtin et al. (2019) cite Dollaghan's (2007) contention that

the emphasis on scientific evidence has overshadowed the other two of the three components of evidence: practice-based and client-based. The TEKA model appears to mesh well with calls made by Greenhalgh et al. (2014) for an approach to intervention research and/or assessment characterized by expert judgment-making rather than the following of mechanical rules, as well as the need to make the ethical care of clients the top priority.

An experimental research design can be suitable for studies of speech-language therapy. An experimental design is one that adheres strictly to the classical positivist model of the scientific research method. It includes a controlled test setting in which a hypothesis is tested, selected variables can be manipulated by the researcher (dependent), and other variables can be measured, calculated, and compared (independent). Though there are many factors that cannot be controlled in human research, there are relevant variables that can be experimentally studied in controlled environments. Adapting or tailoring an intervention to the unique needs and preferences of each client has become a strategy of clinicians and is increasingly a feature of health care in general. The rationale underlying this approach is that adherence to therapy and its effectiveness will be greater if the intervention accommodates personal variability in needs, preferences, and responses to therapy. An experimental design that can also be case based is therefore preferable, but replication of the results in other settings and with larger samples is still necessary. Here as well, there is a need to specify the qualifications and level of training of the SLTs involved, and it is essential that they receive additional training in the specific therapy and therapeutic procedures in use, so that the goal of standardization is attained. Replication requires the inclusion of detailed descriptions of both the client participants and the SLTs involved. The therapeutic procedures should be specified and described in as much detail as possible, as well as any modifications or adaptations of the therapy made to meet individual needs. The timeline must be standardized and structured, and the taking of multiple measurements using validated outcome measures should be included.

Some advantages of using an 'n-of-1' approach in therapeutic practice and research

There is growing awareness of how responses to therapy vary among PWS (Baxter et al., 2015; McCurtin et al., 2019). This aspect of variability may help to attract renewed interest in the benefits of the single case, n-of-1 research approach. Multiple single-case designs guard against threats to the internal validity of a study by including several baseline-dependent variables, then introducing an intervention,



and documenting the effect of that intervention by taking repeated measurements. An advantage of the multiple single-case study design is its flexibility in allowing the researcher to tailor the evaluation to the individuals themselves and to their individualized therapy courses, from pre- to post-therapy. Taking measurements before, during, and following intervention in a single-case design such as this, produces relevant and detailed measurements for accurate comparison pre- and post-test, and this makes it useful in assessing the value of previously untested individualized therapy approaches (Gast & Ledford, 2014). Several direct inter-subject or inter-group replications using the same A-B-A design can be conducted subsequently to increase confidence in the effect of the therapy. A-B-A design refers to a design in which the research has a baseline period where no treatment is given, followed by a period in which the treatment or variable is introduced. Thereafter another period is established in which the treatment or variable is removed so that the baseline behaviour can be observed for a second time (Gast & Ledford, 2014). Effect can be further evaluated, and replication attempted by expanding the study to include additional participants or involving other clinicians. When an A-B-A analysis is supported by systematic replications, confidence in the influence of an intervention on behaviour is enhanced (Gast & Ledford, 2014). There are many designs to choose from, including robust experimental designs (i.e., A-B-A-B, A-B-A-C-A, and multiple-baseline designs) in which control of threats to internal validity is strong (for an overview, see Tate et al., 2016).

The APA recommends reporting on effect sizes for all statistical reports, and calculations of them may constitute valuable information in treatment studies. The d (Cohen, 1988) and Partial Eta Squared (η^2) (Richardson, 2011) measures may be used when assessing effect size, and are common in psychology and education research, though their interpretation is not straightforward. Even though Cohen himself introduced cut-offs as low as 0.2 = small, 0.5 = medium and 0.8 = large when interpreting the effect of an intervention, he also added a strong word of caution that drawing conclusions about the size of effect might be an “operation fraught with many dangers” (Cohen, 1988). It remains of greatest importance, therefore, to interpret findings critically within perspectives of practical, clinical, and personal significance. Given that there is still a lack of information about which elements of stuttering therapy are regarded as most effective by clients themselves, the central question should be about what works best for a person at a particular stage in his or her everyday life. In this sense, pre-/post designs, multiple-baseline designs, or single case experimental designs (Tate et al., 2016, Kratochwill et al., 2021) are all well-suited to the study of treatment for stuttering.

There are always barriers to doing research, however, and considerations of *Evidence-based practice* also reveal clinician-related, client-related, organization-related,

and evidence-related barriers (Gravetter & Forzano, 2016). It must be remembered that if a particular stuttering approach is demonstrated as effective in a clinical setting but remains inadequate for, or unapplied in, a person's daily life, then no amount of evidence from the clinic will be able to compensate for this failure of the treatment to perform where it is really needed. Within the field of stuttering, there remain challenges in finding suitable and reliable tools for measuring stuttering, as well as defining clinically and personally significant outcomes. There are several advantages to using recognised and standardized international measurement tools, and several good measures have been developed (Iverach et al., 2016; Karimi et al., 2018; Wright & Ayre, 2000; Yaruss & Quesal, 2006). Regardless of the variables selected for study, measurement of outcomes of therapy for stuttering must consider the range of speech and psychological variables, and the potentially confounding effects of the appearance of other positive changes, such as increased quality of life, communicative confidence with an accompanying reduction in situation avoidance, and possible increased speaking frequency (including, for some, more stuttering). Bothe and Richardson (2011) recommend a combination of self-rating of the personal significance of treatment-induced changes, alongside professionally objective and defensible data on variables selected by the client as the ideal client-centred evidence base for clinical research. Relevant and specific quantitative and qualitative assessments for measuring emotional and cognitive processes and therapy outcome – particularly from the client's perspective – are needed to explore the concept of evidence in greater detail. Stuttering therapy should incorporate an evaluation of the working alliance as well, particularly from the perspective of the person who stutters. Incorporating such evaluations at an early stage in the therapeutic process may help ensure that well-defined context-sensitive goals, and meaningful tasks are in place, and this can enable SLTs and people who stutter to more easily identify and respond to challenges if and when they arise (Sønsterud, Kirmess, et al., 2019). Previous investigations of the range of treatment programs for stuttering have not identified precisely which factors account for individual change following successful treatment. Investigating the extent to which the stuttering therapy has personal significance for individuals within their daily lives, and whether therapy-produced changes can contribute to improved quality of life, is of great value for determining what constitutes the best evidence base for intervention (Bothe, 2003; Finn, 2003; Ingham, Ingham, et al., 2012). The inclusion of qualitative data and relevant interpretive methodologies, in addition to quantitative data and statistical analysis, is appropriate in the evaluation of whether and how interventions function in a meaningful and context-sensitive way for the person for whom they are intended (Dures, 2012).



Conclusion

In accordance with a pluralistic and pragmatic approach to knowledge production which is suitable and useful in clinical contexts, specialization within speech-language therapy must be pursued within a holistic and individual-sensitive framework. Such positioning allows research-theoretical, scientific, and clinical discussions to take place in an ongoing manner that acknowledges the inclusion of each as vital to the creation of knowledge in speech-language therapy. In other words, there appears to be good reason to take an eclectic approach to the study and practice of therapeutic elements drawn from across traditional approaches. Such combined, integrative approaches can yield effective speech-language therapy and give the SLT greater space and higher status in the speech and language therapy literature, including a more significant role in future research on stuttering. If clinical practice is to be more than the mere application of procedures and methods directed from above, it must be transformed into an 'art' which requires continuing development of speech-language therapy through a reflexive, critical and realist attitude that looks beyond construction of a purely theoretical or technical base. The SLT artist aims to be a master of *techné*, *epistémé* and *phronésis* – all three. The master of speech-language therapy applies tacit, embodied-contextual action and technical knowledge in a context-sensitive, authentic, secure, and individually tailored ('extra-standardized') manner. This form of mastery requires hands-on experience. Observation of SLT students embarking on the practical phase of their education reveals that most have a distance to navigate before they have fully developed a real grasp of the clinical situation, although many may have already acquired technical or theoretical knowledge equivalent to that of their teacher, mentor or professional SLT.

If speech-language therapy is to be regenerated and revitalized as an art, then the more 'artistic' elements in it must be given renewed attention. There will no doubt continue to be theoretical debates about what constitutes evidence. Without clinical expertise of the SLT, the practice of speech-language therapy can be undone by the application of case-irrelevant strategic theoretical evidence, and even excellent research evidence of significance of effect of a therapy approach can be meaningless in the design or evaluation of treatment for a specific person who stutters.

In light of the interdependence of practice and research in producing quality evidence to guide the SLT, we hope this chapter will be a useful contribution to the continuing dialogue, and in this way help to re-work the research-practice evidence gap instead as a *nexus* of theory and practice knowledge. Good SLTs acting within an integrated stuttering therapy framework can and should make use of their in-

dividual clinical expertise and the best evidence from external research-theoretical work, in the continuing effort to construct powerful and transformative understanding and treatment approaches within stuttering therapy as well as within speech-language therapy as a whole.

Multiple choice questions

1. The three classes of knowledge denoted by Aristotle as 'techne', 'episteme', and 'phronesis' can be defined as:
 - a) Instrumental, fundamental theoretical-analytical, and practical
 - b) Technical, descriptive, and analytic
 - c) Instrumental, fundamental theoretical-analytical, and human-relational.
2. Several guidelines for clinical studies of SLT exist. The *Total Evidence and Knowledge Approach* (TEKA) has been developed by:
 - a) Hemming et al.
 - b) Hoffmann et al.
 - c) McCurtin et al.
3. The three pillars of evidence are:
 - a) Research evidence, clinician judgement, and knowledge derived from the experiences and reflections of clients.
 - b) *Randomized Controlled Trials*, single-case studies, and clinician reports.
 - c) Peer-reviewed research articles, clinician case reports, and client feedback measures.
4. The main limitations of the *Randomized Controlled Trial* (RCT) are:
 - a) Over-specificity of focus; lack of generalizability of results; difficulty in recruiting large enough samples.
 - b) Heterogeneity of participant groups limits the possibility of achieving results of significance/usefulness; individual differences and contextual elements significant for therapy outcomes can be lost; relevant information such as negative outcomes can be lost.
 - c) The requirement of more than 100 participants makes them unsuitable for clinical intervention studies in SLT; use of the RCT design involves ethical difficulties because of the nature of SLT therapeutic processes; they are only useful for identifying broad outcomes.



Suggested reading

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