Concept Paper

Applied Pragmatic Functional Contextualism: A New Epistemological and Theoretical Framework for Applied Mental Health Research

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Abstract

This paper argues that psychology, as a discipline, requires research to be situated in the context of a content-based theory. We identify several problems and pitfalls with requiring a content-based theory for applied mental health research, *a priori*. Nonetheless, we also articulate a rationale for why theory matters and that a new sort of theoretical framework is required for applied mental health research. We address this need by articulating a new theoretical framework called Applied Pragmatic Functional Contextualism which satisfies the functions of being theory-driven while also circumventing some of the barriers of relying on content-based theory. We provide clear criteria for APFC and examples of research that is APFC consistent and APFC inconsistent. We conclude by discussing implications of using APFC for individual researchers, the field of applied mental health and the clients they serve, and for psychology as an institution.

1. Introduction

There is a need for a theoretical framework specifically designed for applied mental health research to help researchers learn what works, under what conditions does 'it' work, and for whom 'it' works for. Presently, many psychology publications require a strong theory underlying research findings, especially for qualitative research [1-4]. In practice, reviewers and editorial staff tend to treat theory in the Popperian sense: as a content-based phenomenological net that can be used to identify hypotheses through a deductive process (henceforth content-based theory). In other words, the theory or its postulates are treated as the truth criterion against which experimental findings are evaluated (see below for a further description). Some examples of such content-based theories are social learning theory [5], self-determination theory [6], ecological systems theory [7], schema theory [8], and the like. This tradition in the philosophy of science is useful for evaluating the degree to which a theory can predict observations. In this paper we argue that requiring content-based theory as an organizing framework for applied mental health research is problematic because many important questions for applied mental health research cannot be adequately asked or answered, and this has several deleterious implications for our ability to meet society's mental health needs.

We do not propose a *"Wild West"* of atheoretical subjectivism (see [9] for a full discussion) or purely descriptive and uncategorized science. Rather, we argue that an alternative theoretical framework is required to augment the depth and utility of psychological knowledge. In this paper, we first provide a rationale for why theory (in general) matters and describe why and how theory is essential for useful and valid applied mental health research. Next, we argue that relying on content-based theory alone is both problematic and harmful, as well as insufficient for the goals of psychology as a discipline. While this issue is relevant to the discipline of science in general, we center this discussion in the field of applied mental health research where the problems and pitfalls of content-based theory are especially salient and particularly important to address given the weighty consequences for human suffering. Lastly, we provide a description of, and argument for, a different type of theoretical framework that addresses the function of theory-driven research while compensating for some of the weaknesses in content-based theory. This *Applied Pragmatic and Functional Contextualism* (APFC) framework takes a contextually-framed, mechanistic approach to understanding the phenomenology of human experience and applied mental health. We provide potential implications and next steps for using this type of framework.

2. Why Does Theory Matter?

In general, we seek knowledge to both (a) understand "life, the universe, and everything" [10] and (b) to use that knowledge to improve the quality of life for ourselves and the natural world in which we interact [11]. Western Science is one frame by which we can discover and articulate that knowledge, and most major psychology publications are framed within a Western Science perspective [12]. Western science tends to argue that knowledge can grow either through the discovery and acquisition of new truths about the world [13] or through a hermeneutic (i.e., inductive, iterative, and interpretive) process of increasing the richness and depth of understanding a phenomenon [14]. Both of these processes of knowing require a truth criterion that lies outside the frame of inquiry. For example, the statement "this apple is green" requires a criterion related

to what constitutes and apple and a second criteria of what constitutes green. "This apple is green" cannot have any meaning in itself without referencing something outside the statement.

Theory is important because it establishes sets of truth criteria against which specific statements and observations can be verified. Scientific knowledge is developed through an iterative process of inductively creating "statements" that describe the world, using deduction to develop a hypothesis referencing a truth criterion, and then updating "theory" through induction in response to what was observed in the deductive phase [15]. For example, one may inductively make the statement that "the mass of an object determines the speed at which it falls, with 'heavier objects' falling more quickly than 'lighter' objects." You can make a deduction that a brick will fall more quickly than a feather, test that prediction with experimentation, and update the theory according to findings. In this case, we know that differently weighted objects only travel at different speeds in very large scales (e.g. planetary bodies) and that aerodynamics rather than mass affects the speed of falling objects at smaller scales [16].

Theory also matters because it helps organize a social system where new knowledge can be added to a body of understanding. In as much as scientific inquiry is an epistemological stance and method of knowledge articulation, it is also a social activity completed by humans operating in a number of intersecting communities (i.e. community of thinkers, a broader academic community, social community, family, social location within society, the social location of that society in a global context). Theory affords the ability to (hopefully) communicate ideas and knowledge efficiently between different members in these various communities. When the purpose of knowledge articulation is practical or applied, theory is also important because it allows a community to build on the learnings and knowledge of previous generations of thinkers who have also attempted to solve a problem. In other words, theory allows for a system by which knowledge can be organized, which in turn, allows for increased depth or breadth of knowledge articulation over time. From a functional perspective, the requirement for research to be grounded in theory is important in order to promote (1) an *a priori* truth criterion that can be used as a referent for interpreting the observations and (2) an ongoing and organized system of relations between observed phenomena. For a theoretical framework to be useful then, it must serve the two functions of: (1) specifying a *way of knowing* what the information means and whether it is "true," as well as (2) instructions on how to discuss the findings in a way that allows other community members to contribute to that body of understanding.

Many theories in psychology operate in a manner akin to a Popperian [15] view of knowledge generation: namely, that there is a cyclical process of inductive theory development, followed by deductive specification of what observations would be expected if the theory were true, and experimentation to determine if those observations come to bear. When there is consistent dis-corroboration, the theory is adjusted, and the deductive process begins again. By following this method, content-based theories are developed and refined in the hopes of identifying ontological truths about the foci of psychological science.

3. Problems and Pitfalls of Content-Based Theory for Applied Mental Health Research

While content-based theories do meet the required functions of theory in scientific knowledge articulation listed above, we argue that it is not the only way of meeting those functions. The strength of the traditional approach is that it facilitates discussions about ontological truth (i.e.,

universal truths about the world). Ironically, however, it is not well suited to applied mental health research because the goals of that research are not limited to discovering ontological truths about the world, but rather, are primarily focused on discovering practical truths to reduce suffering.

Many journals in the field of psychology expect that a content-based theory is used *a priori* for the design of research and interpretation of research data. This might be especially true when researchers provide qualitative findings and those that provide hermeneutic, phenomenological, or interpretive, data. There are several problems and pitfalls of psychology publications requiring content-based theory as a rationale for a set of findings. We have identified at least three reasons why these pitfalls may be especially relevant in the domain of applied health research targeting mental health prevention and promotion (henceforth applied mental health research).

First, requiring content-based theory establishes and promotes context where social inequities are likely to be perpetuated because it relies on a structure of knowledge creation that centers academia rather than the voices and experiences of the community. There is a robust history of racism and silencing of minority voices in psychology [17]. In large part, this was maintained by academically driven theory and an unwillingness to - or unawareness of – the value of the experiences of marginalized people and communities as valid. As a result, many leading psychological theories were developed on the basis of majority voices. Thus, when a content-based theory is required *a priori*, a common result is the omission of the voices and experiences of disempowered and marginalized individuals. For example, a qualitative study found that Indigenous elders believe that Western mental health practices *could* be effectively introduced into Indigenous communities but they have not been effective because Western mental health interventions have not honored Indigenous healing perspectives and frequently disparage and dismiss well established healing practices within the traditions of the community [18]. If researchers are required by funding agencies or by journal submission requirements to include an *a priori* theory when conducting this type of research, researchers have two options: the first, to force a pre-existing theory on the data collected from participants, one which was generally developed without their voices and experiences, or, the second, to find an appropriate theory after the fact that they can use to organize their findings [19, 20]. With regard to the former, this contributes to a context where privileged and powerful individuals are encouraged to declare that their view is right and the view of others is wrong, carrying harmful implications for marginalized voices and movements that might also have important contributions to make [21], especially when those marginalized communities have different epistemologies and systems of knowing [22, 23].

The latter strategy of finding a theory to fit the data after the fact is problematic because it circumvents the falsification process which is a foundational tenet that lends rigour to empirical research. Circumventing it can lead to erroneous corroboration of a content-based theory that might otherwise be dis-corroborated [15, 24], and thus may lead to invalid conclusions about both theories and specific findings. In this way, this practice might be implicated in the replication crisis. This issue has been flagged as a likely common (though surreptitious) practice in the research field [19, 20], and given the potential ramifications of this process outlined here, should be considered as one argument for the need to find an alternative to *a priori* content-based theories as a prerequisite to conducting and/or publishing research.

This relates to a second problem: requiring content-based theory establishes a blind spot where important findings may not be communicated to the community of research psychologists because they were discovered spuriously rather than intentionally. When publications require content-

based theory *a priori* they set the stage where researchers will be more likely to examine phenomena within the scope of that theory. In the context of applied mental health research, this results in slower and less impactful knowledge development which has real consequences for the populations that the research seeks to serve. For example, in recent years, a small body of research has identified that requiring LGTB2Q+ youth to get parental consent to participate in research has deleterious effects. For example, in one study, it was found that the most at-risk youth do not participate in applied mental health research designed to support them and their communities when parental consent is required. Therefore, public health initiatives designed for that population are missing the target persons in their evaluations [25]. This important finding emerged from an intervention trial that utilized an evidence-based implementation-sensitive research framework to foster healthy relationship skills among LGBT2Q+ youth [26]. While the default practice of requiring consent is not inherently faulty, this example highlights an instance in which proceeding with this standard practice can lead to the omission of minoritized voices. Implementation sensitive research is definitionally atheoretical because the feature of being implementation sensitive means that the program must be agile and responsive to the implementation contingencies and contextual features of a specific setting (e.g. program facilitators, program recipients, physical infrastructure, organizational culture [27]). It was through an attempt at reducing implementation barriers that the authors observed the deleterious effects of parental consent processes on LGBT2Q+ youth, rather than as a result of a theory-driven attempt at creating new knowledge. Applied mental health research is replete with examples of important knowledge creation emerging from atheoretical research agendas, but because many psychology publications require content-based theory, those findings are often not communicated. Alternatively, scholars might be tempted to "hold theory lightly" and "play the game" of publication by discussing their results in light of a theory that explains the findings even if that theory was not intentionally chosen at the design phase [19, 20].

A third problem with requiring content-based theory is that it creates a context that favors categorical and topographic ways of understanding the human experience as opposed to functional and mechanistic understandings. In the domain of applied mental health research, this slows and impairs the rapidity and impact of the knowledge articulation and mobilization. As a result, we now know that many applied mental health programs work, but we don't know *how* they work, or *for whom*. The emphasis on content-based theories encourages researchers to study gross features that align with theories instead of functional or mechanistic components that might only be discovered through spurious findings or pragmatic atheoretical inquiry (see [11] for a related argument applied to implementation science). As one example, researchers used behaviorism to demonstrate that antecedent manipulation via individualized student greetings (i.e., teachers saying "hello" to students) leads to more on-task behavior [28]. This does not answer questions about how this intervention works or for whom. One could readily imagine that a student who is fearful of their teacher would react differently to personal attention compared to students who seek connection with their teacher.

To review, requiring content-based theory is problematic because it risks decentering the voices of marginalized communities, may contribute to the replication crisis by circumventing the falsification process, creates blind spots in research, and creates gaps in our ability to understand how and for whom applied mental health research findings are relevant. While these concerns may be relevant to scientific inquiry generally, they are highly relevant to applied mental health research and carry implications for human well-being; thus, are worthy and pressing matters to address. An

alternative to requiring content-based theories is for psychology publications to encourage and adopt additional types of theoretical frameworks, for example, functional and mechanistic theoretical frameworks.

4. Applied Pragmatic Functional Contextualism is an Alternative Theoretical Framework for Knowing

The problems and pitfalls associated with content-based theory have been addressed in different ways within other process-based epistemic frameworks such as such as Interpretative Phenomenological Analysis [29], Grounded Theory [30], Mechanisms in Implementation Science [31], Structural Equation Modelling [32], Path Analysis, Mediation and Moderation [33] and others. Nonetheless, none of these frameworks sufficiently address the need for an organizing theoretical framework specifically designed for applied mental health research because they are either too resource-intensive to be practical or have different aims and foci that do not lend themselves well to the questions that applied mental health research aims to answer. For example, Grounded Theory seeks to develop theory and universal explanations for a phenomenon, Interpretative Phenomenological Analysis seeks to understand the meaning and nature of human experience, and other process-based epistemic models each have their own analytic goals that do not satisfice the need for a new model for applied mental health research.

To address this problem and fill the gap in the landscape of theoretical frameworks suited to applied mental health research, we propose an alternative framework which we call "Applied Pragmatic Functional Contextualism" (APFC).

At first glance, the term Applied Pragmatic Functional Contextualism may seem redundant because functional contextualism is a well-established theory rooted in pragmatism [34]. Nonetheless, functional contextualism was developed to provide an account of behaviour, emotional difficulties, human cognition, and language at the individual level [34] and therefore its scale and units of analysis are unrealistic to be used as a theoretical framework for applied mental health research. Indeed, functional contextualism as a theoretical framework requires a model to "(1) focus on the whole event, (2) [demonstrate a] sensitivity to the role of context in establishing the nature and function of an event, and (3) [reference] a firm grasp on a pragmatic truth criterion" [35] (p.6). There are too many complex ecological levels to make this depth of analysis practical for applied mental health research. To name but a few examples: policy and funding, culture of large institutions like health systems, culture of specific institutions, the physical attributes of specific instructions like their physical location and structure, facilitator characteristics, intervention characteristics, implementation fidelity of both specified and unspecified intervention characteristics, experience of the individual, historical context of these systems and models of care in relation to the individual's social location and identity [36].

As such, APFC uses the same rationale as traditional functional contextualism but on a broader ecological scale. We suggest that for research to be consistent with APFC-based theory, it must:

1) Have a pragmatic truth criterion rooted in "successful working," which specifies that an analysis is only true if the analysis meets its analytic goals devised by the researcher and increases one's ability to predict and influence the target of the applied mental health research in a specific context [37, 38];

2) Describe potential mechanisms by which the findings were conferred with a sensitivity to the contexts in which those findings occurred;

3) Situate those findings and possible mechanisms in relation to a phenomenological network of other research findings; and

4) Consider the relevant features of the wider system in which the applied research event occurs and the ways in which that influences the findings themselves.

The APFC framework will influence all phases of the research process. For instance, at the design phase, researchers will strive to identify and capture information about various contexts that might influence key study variables (e.g., participant and facilitator characteristics and perspectives, experience of relevant persons within the institute where intervention is occurring, history of that institution as relating to relevant persons, etc.). Researchers will want to proactively consider how to measure the variables of interest in a valid way. While collecting data, researchers working in an APFC-consistent manner should set out to create open and trust-worthy connections with various involved parties, and should be open to adapting and changing their practices in response to learning throughout the research process. While conducting data analysis, researchers should consider how different sources of data influence one another rather than interpreting findings in isolation. Finally, when drawing research conclusions and writing up research findings, results should be situated within the wider phenomenological net and consider the social context in which the research occurred. Researchers also have to be attentive to the pragmatic truth criterion and describe findings with functional utility at a procedural or mechanistic level. For instance, it isn't sufficient or APFC-consistent to conclude simply that a therapy works; instead, we want to be able to indicate under which conditions, and for whom it works.

In more concrete terms, a study can be seen as consistent with the APFC framework when it meets the analytic goals of the researcher in a way that increases the field's ability to predict and influence the target of the applied mental health research, and does so in a way articulates specific mechanisms that plausibly account for the observations. Those mechanisms and findings should be meaningfully linked to previous research in the field of inquiry, and the findings should be situated within the wider context of the whole system in which the research occurs. The operational definition of these criteria and concrete examples considerations of who the definition might be applied are provided in the tables below. The second table provides readers with two examples of research that would be consistent with an APFC framework, and the third table provides an example of a similar research topic but conducted in a manner that is not APFC consistent. See Table 1 for operational definitions, Table 2 for an example of an APFC **consistent** research design, and Table 3 for an example of research that is naturalistic and descriptive but which **is not** APFC consistent.

Table 1 APFC criteria, operational definition, and checklist of examples of how to apply the criteria.

	Criterion	Operational Definition	Examples of practical considerations for applying the criteria
1	Has a pragmatic truth criterion	Increases the ability of the field to predict and influence the target of the research	☐ Findings answer the research question ☐ The area of focus is advanced as a result of the inquiry

2	Articulates plausible mechanisms for the findings	Provides plausible mechanisms by which the applied research findings occurred in relation to the wider context and the phenomenology of the research area itself	□ Suspected or purported mechanisms of action are plausible □ Suspected or purported mechanisms of action are testable □ Suspected or purported mechanisms of action are sensitive to the features in criteria 3 and 4
3	Situates these findings in a wider phenomenological network	The specific 'single event' features of the above criterion are situated within the wider research context of related phenomena	□ There is existing research and evidence to support these findings and mechanisms □ The findings are meaningfully linked to other findings in the area of inquiry
4	Considers relevant features of the wider system	Demonstrates sensitivity to the contextual and systemic factors that impact the applied mental health research findings	Given the social location of the participants, service providers, and researchers, the methods, analytic strategy, and conclusions consider: □ Ways in which the relationship between researchers and participants may have impacted the findings □ Ways in which the methodology impacted the findings (e.g. survey, focus group, photovoice) □ Ways in which the setting the research occurred might have impacted the findings □ Ways in which the intervention setting might have impacted findings □ Ways in which the relationship between clinicians and recipients impacted the outcomes □ Whether a western epistemology is appropriate for the subject of inquiry □ The research question and findings are situated with the social-historical context and lived experiences of the relevant parties

NB: This list is illustrative not exhaustive or required in its entirety

Table 2 Examples of research design, analysis, and interpretations that are consistent with APFC.

Research Description Example 1	Explanation of why it is APFC-consistent
A research group wants to determine whether an evidence-based intervention (whose evidence was established in predominantly white community samples) is experienced as acceptable by youth in secure custody. After running four separate intervention groups with youth in secure custody, the researchers conduct interviews to ask youth about their experience. They found that youth who have had positive experiences with care systems in the past (e.g.	This example is consistent because it: 1) Met the analytic goal of the researcher (to determine acceptability of the program in a youth custody setting) and advanced the field of adapting mental health interventions to secure custody settings

had a counsellor they trusted and relied on) were more likely to find the treatment acceptable. The researchers also found that white youth were more likely to have had such an experience. Moreover, the researchers found that youth from the first three groups reported more positive experiences and acceptability than youth in the fourth group. To explore this finding, the researchers held a focus group with youth across all four groups and found that youth consistently experienced Facilitator A (from the first three groups) as friendly and approachable, and Facilitator B (from the last group) as harsh and intransigent.

The researchers conclude that the program can sometimes be acceptable to youth in secure custody, but that the acceptability is contingent on their previous experience of receiving care and the warmth, and on the personality of facilitators. They note that many features of the program are prescriptive and skills-based and that individuals who have had harmful or invalidating experiences with mental health professionals may be more likely to feel judged or invalidated when they are asked to change. The researchers also note that youth may be less willing to engage with and try the skills and content if they have low trust or aversive feelings towards the facilitator.

Additionally, the researchers conclude that racialized youth in custody may be more likely to have had unhelpful or harmful experiences with receiving care in the past, and that this may be resultant from systemic oppression and inequities in the social determinants of mental health and mental health services.

2) It articulates plausible mechanisms for their observations which are testable, and which predict and influence the acceptability of the program

3) The purported mechanisms are plausible given the wider research and phenomenological net on youth mental health treatment

4) Criteria 2 and 3 are situated within a wider context (in this case systemic oppression and differential access to care) that accounts for the how those mechanisms are established and maintained.

In this fictional example, while the researchers could have decided *a priori* to investigate the youth experience from a perspective of a content-based theory, they did not. Instead, they wanted to put the youth voice and experience first and make sense of their experience given a wider knowledge base. In so doing, the researchers helped identify plausible mechanisms that could be tested and which could lead to quick improvements. Examples such as this highlight the benefit of using APFC-based theory to frame findings in a valid, refutable, and useful manner.

Research Description Example 2	Explanation of why it is APFC-consistent
As part of a larger program of research, researchers noticed that some participants in a structured intervention for survivors of domestic violence experienced trauma reactions during the program. They also noticed that, when program facilitators addressed those trauma reactions, participants had positive outcomes; when facilitators did not, participants had neutral or negative outcomes from the program. Despite facilitators having been trained in trauma-informed care and instructed to monitor and respond to trauma reactions, this interpersonal and process-based component of the program was not being implemented. The researchers sought to understand and intervene to increase implementation of trauma-informed responses. Knowing that many facilitators have limited knowledge of specific trauma reactions and how to respond to those reactions, and knowing that the training on trauma occurred long before the program was	1) Met the analytic goal of the researcher (to determine if facilitators found the questionnaire helpful) 2) It articulates plausible mechanisms for their observations which are testable, and which predict and influence the utility of the checklist (indeed, clear quantitative designs readily emerge from this analysis) 3) The purported mechanisms are plausible given the wider research factors that influence clinical decisions in psychosocial interventions 4) Criteria 2 and 3 are situated within a wider context (in this case a research-practice gap related to knowledge mobilization) that

implemented, the researchers wondered whether completion of a weekly trauma reaction and response checklist would increase the ability to of facilitators to notice and respond to trauma reactions. They developed this resource and provided it to clinicians running the intervention [39]

The researchers held focus groups with facilitators who used the checklist to ask whether the checklist increased their ability to notice and respond to trauma reactions. They found that all participants found the measure helpful and were able to provide specific examples of times when they noticed and responded to a trauma reaction that they otherwise would have missed. In response to questions asking participants how it improved their practice, participants reported that they were more intentionally focused on tracking trauma reactions in their clients, that they were more able to know what to look for, and had clear guidelines on what to do if a trauma reaction occurred. They also note that they are always told to be "trauma-informed" and they want to be, but they didn't really know how to.

The researchers conclude that the questionnaire was helpful and that it may support increased fluency in trauma assessment and response while also increasing the motivation to attend to those processes. They also discuss a research-practice gap where knowledge mobilization efforts often fail to provide concrete practice suggestions leading clinicians to agree with an agenda without knowing how to execute it. The researchers consider how this pattern of results may be more important for facilitators with less training in trauma reactions or those working with a client population they are unfamiliar with, and that the specific reactions and responses included on the checklist may need to be adjusted based on the social location of the participants.

accounts for how those mechanisms are established and maintained.

In this true but unpublished example, the researchers could have investigated the problem from an *a priori* model such as Self Determination Theory [6] of therapists but they did not. Instead, they centered the voice of clinicians both in scoping the design and solution for the intervention and in the methodology for understanding its impact. They situated these findings in a wider phenomenological network of research on mental health intervention and contextualized them within the wider social context in which the research and intervention occurred.

Table 3 Example of a research design, analysis and interpretation that is <u>not</u> consistent with APFC.

Research Description	Explanation of why it is or is **not** APFC-consistent
A research group wants to determine whether an evidence-based intervention (whose evidence was established in predominantly white community samples) is experienced as acceptable by youth in secure custody. After running the intervention with youth in secure custody, the researchers asked participants to	This example is **not** consistent with APFC: 1) This example meets criteria 1 (successful working). It met the analytic goal of the researcher (to determine acceptability of the program in a youth custody setting) 2) This example does not articulate any plausible mechanisms about why sessions 1 and 5 were

complete a brief questionnaire that asked: (a) what activities did they like the best, (b) what activities they liked the least, and (c) what should facilitators know if doing this work in the future.

They found that most youth enjoyed sessions 1 and 5 and disliked session 8. They also completed a content analysis for question (c) and found that, of those who responded, 80% mentioned that being friendly was important.

They conclude that the content of sessions 1 and 5 are well received and recommend that future iterations of the programs should augment the dosage of those sessions. They also conclude that the content of session 8 needs to be redesigned to be more acceptable. They recommend that training efforts include explicit direction to be friendly when delivering the session.

acceptable and session 8 is not acceptable. In a discussion the researchers *could* speculate about why, but there are no data collected to inform those conclusions so it would not be considered as consistent with APFC.

3) The specific findings were not situated within a larger network of previous findings. Because no mechanisms were described, their plausibility given this network is not able to be evaluated.

4) Nothing in this design considers the wider context of youth mental health, experiences of youth in conflict with the law, systemic oppression, implementation science considerations in applied mental health, or any other wider system.

In this fictional example, the researchers only met one of four required criteria. Given the purpose of the research, the investigators *could* have augmented the design, analysis, and interpretation to be APFC consistent. Nonetheless, the research is still useful and would likely be acceptable for many fields. It would not, however, meaningfully advance the field of applied mental health research with respect to articulating how the intervention works, under what conditions, and for whom.

5. Summary: Applied Pragmatic Functional Contextualism

Rather than evaluating the degree to which a theory can predict observations, evidence-based implementation-sensitive applied mental health research aspires to understand which outcomes occur under which conditions and for whom. The requirement of situating research within a content-based theory is ill suited for applied mental health research for a number of reasons described above. Nonetheless, having a theoretical framework is still important for advancing science. The present paper articulates a theoretical framework that can be used in applied mental health research that maintains the benefits of theory-driven research, while overcoming the limitations imposed by requirements to rely on a content-based theoretical foundation. We argue that using this framework to guide applied mental health research will facilitate more expedient, nuanced, and potentially useful knowledge.

We acknowledge that no theory can truly be content-free and that all theories carry with them meta-theoretical assumptions. Indeed, the APFC framework still falls within a broadly positivistic framework. Nonetheless, APFC seeks to circumvent the requirement of a Popperian-like approach to "confirming" or (more accurately) disconfirming the content of a specific theory.

Using APFC as a theoretical framework has beneficial implications for individual researchers, applied mental health settings and the clients they serve, and the field generally. Regarding individual researchers, APFC provides a valid and theoretically meaningful framework for conducting applied mental health research without needing to either force findings into a theory *a priori* or apply a theory to fit the data *ad hoc*. APFC might help applied mental health settings and their clients because it creates a framework for better identifying what interventions work (or don't work), for whom they work, and under what conditions do they work. It also provides a framework that encourages soliciting and centering the voices of intervention recipients and process data on possible mechanisms, mediators, or moderators. APFC also benefits the field generally by establishing a framework that allows for more applied mental health research to be published in psychology journals and by circumventing practices that might lead to non-replicable findings and misrepresenting the credibility or import of findings.

To aide in the uptake and usability of the APFC framework, we provide concrete examples of considerations for each of the four APFC criteria. We also provide examples of research designs and analyses that are APFC consistent and contrast one of those examples against an APFC inconsistent design and analysis.

In the words of Yogi Berra "in theory there is no difference between theory and practice. In practice there is" and "you can observe a lot just by watching." We hope that the APFC framework addresses a gap in the field that is created by over-reliance on content-based theory and that use of APFC will advance a more nuanced, contextually-relevant, and mechanistic understanding of applied mental health inquiries.

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Author Contributions

Eli Cwinn Ph.D., C.Psych. developed the APFC framework as an epistemological framework for applied mental health research. He developed a rough argument for the limitations of existing epistemologies and the rationale for why theory driven research is important. Kayla Hamel Ph.D., C.Psych. refined the general logic of the ideas and tied them to real world problems in psychological research. She also extended the logic of the paper to identify implications of APFC to a number of user groups. Dr. Hamel also identified the need to provide guidance on practical applications of

APFC to different research areas. Drs. Cwinn and Hamel jointly developed the user checklist and equally contributed to the writing, editing, and reviewing of the manuscript.

Competing Interests

The authors have declared that no competing interests exist.

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