AN INTERDISCIPLINARY FRAMEWORK FOR ISLAMIC COGNITIVE THEORIES

by Paul M. Kaplick, Yaqub Chaudhary, Abdullah Hasan, Asim Yusuf, and Hooman Keshavarzi

Abstract. The Islamic psychology (IP) community in Europe has recently witnessed a heated debate about the credentials required to participate in the theoretical substantiation of IP and Islamically integrated psychotherapy and counseling. This debate has provided convenient circumstances for Muslim psychologists and Islamic scholars alike to rethink their roles within the flourishing movement. Specifically, the discussions hint toward the importance of adopting a collaborative research methodology for IP, in particular for basic research. The methodology of choice will need to define the necessary qualifications and responsibilities of scholars and psychologists in a collaborative research process (personal collaboration) and evince its capability to appropriately marry knowledge and data, diverging research methods, and perspectives, concepts, and theories from Islamic studies and contemporary psychology (content-related collaboration). Here, we devise and offer a case illustration of an Islamic Psychology Basic Research Framework (coined the SALAAM Framework). This framework uses the Institute for Interdisciplinary Studies (IIS) Model of Interdisciplinary Research, developed by the IIS at the University of Amsterdam. Our first aim is to appropriate the IIS model for the IP literature by applying the model's research process phases and technique for the integration of disparate bodies of knowledge—that is, the identification of common ground—to methodological approaches in the contemporary IP literature. Our second aim is to exemplify the devised SALAAM Framework using the relatively unexplored area of Islamic cognitive theories (ICTs), which remain underdeveloped in contemporary psychological literature, primarily because of a lack of commensurability with the nomenclature of contemporary psychology. We thus provide a primer on the potential scope of ICTs. Toward

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the end of this article, we discuss the potential of the project of interdisciplinary construction of Islamic psychological theory, and the ability of the SALAAM Framework to establish a research program in IP that centers on cognition. We finally offer our reflections on the distinctiveness of Islamic psychologies in comparison to mainstream and Christian psychology.

Keywords: ʿ*aql*; cognition; cognitive science; intellect; intellection; interdisciplinarity; interdisciplinary; Islam; Islamic studies; neuroscience; psychology

Current Opinions in Islamic Psychology: From Isolation to Collaboration

In recent months, there has been much debate in Europe about the academic and professional prerequisites for engaging in the conceptual development and theoretical substantiation of Islamic psychology (IP) and Islamically integrated psychotherapy and counseling, both for Muslim psychologists and Islamic scholars. The European IP community has thus embarked on an important search for authenticity and sound knowledge based on Islamic principles (Hasan 2018). However, in some quarters, the discussion around expertise and qualification has also been political because it touches upon the interpretational sovereignty of the adjective "Islamic," which has traditionally been the purview of Islamic scholars. This invites us to elaborate on the parameters of personal collaboration within the IP movement. While outlining the demarcation between *Muslim* psychology and psychotherapy (transcultural approaches that may necessitate a psychological background) and *Islamic* psychology and psychotherapy (religious approaches that may necessitate a religious background) might facilitate the specification of the roles of Islamic scholars and Muslim psychologists in IP, we offer a middle-ground suggestion for academic and professional qualifications and responsibilities in the research process that would enhance prospective research best, especially basic research. This suggestion puts forth a criterion that has been coined "adequacy" by interdisciplinary studies (Repko and Szostak 2017, 146). Adequacy denotes the ability to relatively safely navigate the epistemology, assumptions, concepts, theories, and methods of a discipline that is not one's own area of expertise and to comprehend its distinct perspective on a problem at hand. While adequacy certainly contributes to establishing quality standards in basic IP research, this criterion is no benchmark that will ensure integrity to the Islamic tradition (cf. Figure 1 for more details).

Basic familiarity with the Arabic language and Islamic studies, ideally at a postgraduate level, may be the principal prerequisite that accounts best for adequacy in Islamic thought among Muslim psychologists. This

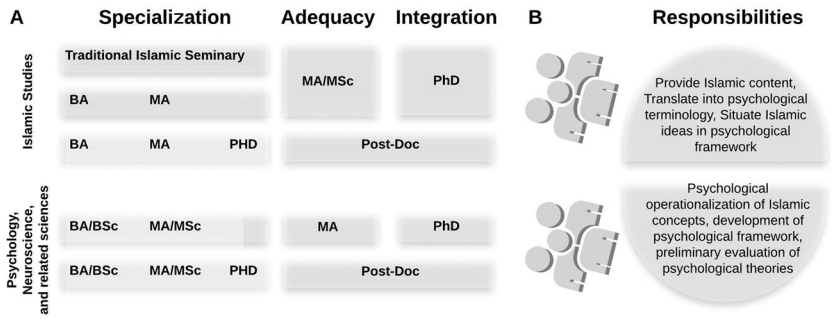

Figure 1. Personal collaboration in the interdisciplinary SALAAM Framework. (A) Current educational trajectories into *basic research* in IP. This model emphasizes the importance of a specialization. As the field develops, integrative degree programs will be developed and offered by the dually trained to appropriately credential people. Before these programs emerge, however, an important distinction is that Islamic degrees either correspond to (1) *ijazāt* (traditional Islamic seminary in this figure) that authorize knowledge transmission and allow individuals to appreciate a holistic understanding of the Islamic paradigm as believers, or to (2) academic education in Islam, which does not necessarily understand Islamic thought in the context of belief. It is debatable whether solely an academic education in Islam meets the requirements of "adequacy." Since there is also little standardization in *ijazāt*, what would be required for both *ijazāt* programs and academic degrees in Islam is effectively a competence test to ascertain how much of the relevant traditional studies people have actually attained, retained, and can act upon. (B) Each discipline's remit in the interdisciplinary research team process.

prerequisite is applicable to research done by different Muslim psychologists who hold to either a strict definition of "Islamic" that is, content which is regarded as Islamic only if it is explicitly derived from Islamic sources—or a wide understanding of "Islamic" that accepts every content as *per definitionem* Islamic if it does not violate Islamic tenets. The latter opinion may allow incorporation of *sharīʿah*-compliant ideas from other intellectual traditions into IP discourse, yet does not justify loosening the reins for the required credentials to participate in this discourse. Adequacy in Islamic thought will enhance Muslim psychologists' responsibility to (1) psychologically operationalize Islamic concepts, (2) develop a psychological frame of reference for Islamic content (i.e., to draw connections between Islamic concepts and articulate an overall theoretical framework), and (3) offer preliminary evaluation of what is and what is not Islamically acceptable in psychological theories because Islamic scholarship cannot possibly delve into every recess of psychological theory.

While the individual work of Muslim psychologists has guided most activities during the last forty years or so in the English IP literature (Rothman and Coyle 2018, 2) and Muslim psychologists can, at best, achieve a tentative Islamic evaluation of psychological theories, it would be preferable for

Islamic scholars to provide and develop Islamic content. A basic familiarity with the ideas of psychology and the process of counseling and psychotherapy, ideally at a postgraduate level, is similarly critical for promoting adequacy in psychology among Islamic scholars. This would facilitate scholars' responsibility to (1) decide which Islamic ideas are relevant to psychological inquiries, (2) translate philosophical and theological terminology into psychological terminology, and (3) situate Islamic ideas in a psychological frame of reference (these parameters of personal collaboration in IP are depicted in Figure 1). Learning to work together and to speak each other's language is presently the key challenge, which, when overcome, will allow us to engage in *inter*disciplinary team work, where a shared conceptual vocabulary can be developed that will enhance collaborative scrutiny of the *same* multifaceted and complex problems, as opposed to merely working independently on *different* pieces of the puzzle in a *multi*disciplinary fashion.

The standards we are dealing with here are rather simple and pragmatic, although not yet established. We hold the opinion that the discourse on the nature of collaboration between Muslim psychologists and Islamic scholars should be taken a step further. The critical question is how we can conduct research that appropriately integrates knowledge and data; research methods, techniques, and tools; perspectives, concepts, and theories from both Islamic studies and contemporary psychology (content-related collaboration), and translates our fundamental findings into practical psychology and Islamic religious practice (Elmessiri 2006, 68). Although a plethora of applied clinical research is currently under way with a spotlight on Islamically integrated psychotherapy, we express our discomfort with the opinion that IP derives its relevance almost solely from its utility to provide Muslims with suitable therapeutic services: IP is more than (Islamically integrated) psychotherapy and counseling. There is an inherent value in basic research that seeks to understand the fundamental beliefs governing the Islamic conception of the human and its relation to contemporary notions of mental processes, behavior, and brain functioning, and being able to integrate these distinct bodies of knowledge.

Therefore, in the first part of this article, we attempt to devise a methodology for interdisciplinary research between Islamic scholars and Muslim psychologists that may be employed when diving into a field of basic research in IP. Subsequently, in the second part of this article, we will explore how the devised methodology can be used to operationalize one area of basic IP research, namely, the relatively unexplored field of Islamic cognitive theories (ICTs). To this end, we outline our programmatic ideas on the unrealized scope of ICTs. Near the end, we summarize some of the criticism of the project of interdisciplinary construction of Islamic psychological theories and of the devised framework. We also offer our reflections on the distinctiveness of Islamic psychologies in comparison to mainstream and Christian psychology.

The Islamic Psychology Basic Research Framework (SALAAM)

We propose to deploy the Model of Interdisciplinary Research by the Institute for Interdisciplinary Studies (IIS) at the University of Amsterdam (Menken and Keestra 2016) for the development of an interdisciplinary **Isla**mic Psycho**l**ogy B**a**sic Resea**r**ch Fra**m**ework, which we come to term the SALAAM Framework (Arabic: *salām*, health, peace). The IIS model is inspired by Repko and Szostak's (2017) seminal work and has been adapted in Europe for team work–based research in the natural, life, and social sciences, and especially brain and cognitive sciences. The IIS model describes the cornerstones of one possible interdisciplinary research process: orientation (identification of problems or topics, formulation of preliminary research questions), preparation (development of theoretical framework, finalization of research questions and subquestions, consideration of research methods and design), data (data collection and analysis), and finalization (interpretation of results, discussion of research and conclusions). The need for interdisciplinary integration may be driven by the complexity of adaptive and dynamical natural and societal systems (monodisciplinary approaches might not be able to comprehensively appraise the nonlinear, seemingly irreducible behavior of these systems), basic research at the interface of disciplines, societal problems, and generative technologies.

A fundamental technique provided by the IIS model for the integration of specialized bodies of knowledge is the identification of overlap in interest between disciplines or common ground. Pinpointing a shared terrain of investigation may be attained by *describing* a theory that may be shared between disciplines but might build on potentially conflicting metaphysical, ontological, epistemological, anthropological, cultural and social, ethical, and methodological assumptions and objectives; *explaining* the phenomenon that is the subject of this theory; combining methods from the different disciplines to *study* the phenomenon; and *reinterpreting* knowledge and data from the different disciplines without forcing results to be consistent. Integration can thus occur at different levels: concepts, theories, and methods.

An integration of disciplinary insights is hampered by the specific way of thinking and conducting research within a discipline. Three possible techniques can facilitate the identification of common ground and reconciliation of divergent views by *adding* elements from another discipline in order to extend the possible meaning of an idea; *adjusting* the definition of a concept, theory, or methods, if properly justified; and *connecting* the different meanings of a concept. An important consideration associated with the adjustment technique is that it can provide a mechanism for paradigmatic assumptions of one discipline to implicitly bias, embed themselves, and constrain another discipline, especially when the latter is

underdeveloped (e.g., emerging discourse on the cognitive aspects of the mind in IP). Philosophical reflection of disciplinary assumptions, reflective equilibrium, and team metacognition (conscious monitoring of cognitive processes and representations) are tools offered by the interdisciplinary studies for the research team process to facilitate explicating disciplinary assumptions (Keestra 2017a). It is beyond the scope of this article to provide a detailed exposition of the IIS model and we are only capitulating its most salient features for the current preliminary stage of integration.

To appropriate the IIS model for the IP literature, the cornerstones of the interdisciplinary research process and the technique to identify overlap in interest can be applied to methodological approaches that aim at relating Islamic and psychological content. These approaches have recently been synthesized from the last forty years of publications on the relationship between Islam and psychology (Kaplick and Skinner 2017, 200).

In principle, the SALAAM Framework can direct any sort of basic research in IP. Basic psychological research investigates the fundamental characteristics of mental processes and behavior ("what is intelligence?"), rather than their applied value ("how can intelligence be measured?"). The initial stage of the SALAAM interdisciplinary research methodology consists of a comparison of a contemporary psychological take on a given topic with an Islamic opinion, following Malik Badri's Islamic filter approach (Badri 1979). This stage carries the objective to screen for topics that may indicate an overlap in areas of investigation and corresponds to the "Orientation" phase of the IIS model. The existing IP literature serves as the primary source for research at this stage and is complemented by Islamic theological and philosophical writings. It is crucial to not only consider English publications because the field is replete with works in Arabic, Farsi, Malay, Ottoman Turkish, and Urdu. This body of knowledge can behave as an impetus for the identification of problems and the formulation of preliminary research questions with the objective to operationalize research into relevant components. These preliminary questions can be used to construct a psychological argumentative structure or framework that provides the medium for scrupulous discussions of, and philosophical reflection upon, assumptions, definitions, and arguments between Muslim psychologists and Islamic scholars.

In the second stage, research efforts can transition into what has been described by Rasjid Skinner (1989; 2018) as the IP approach. This approach dispenses the lion's share of attention to early Islamic scholarly literature, especially from spiritual masters (Quasem 1981) such as Abū Hāmid al-Ghazālī, Shāh Walī Allāh, al-Muhāsibī, Mustafa Sabri, al-Qushayrī, al-Makkī, Ibn Taimīya, or Ibn Qayyim (cf. the latter's *al-Fawāid*, *Miftāḥ Dār al-Sa'āda*, or *Madārij al-Salikīn*, in which he largely tackles the notions of thought, *khawāṭir*, and reflection, *tafakkur*). The goal of this stage is to discern the (implicit) psychological interpretation of the Islamic primary

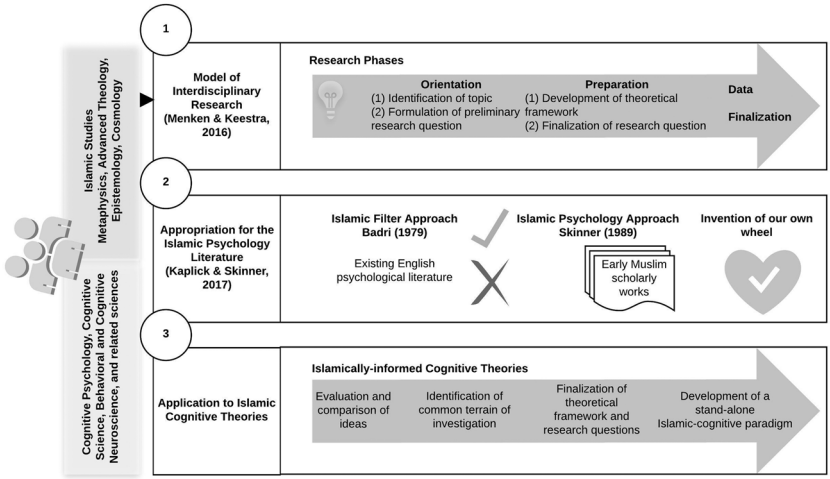

Figure 2. Content-related collaboration in the SALAAM Framework and its application to Islamic cognitive theories.

sources (*Qur'ān* and *Sunna*) that has been produced by early Islamic scholarship and that was allegedly nourished by the "Islamic" environment in which these scholars lived (Skinner 1989; 2018, 3–5). One suggestion is to use their works for the "Preparation" phase where a theoretical framework, research questions and subquestions, and research methods and design are finalized (see Figure 2).

Even though it seems obvious that expanding critically upon existing knowledge is naturally the first step toward avoiding a never-ending reinvention of the wheel, we know of relatively little about early Muslim scholarly thought in the English IP literature. Only a few listings of topics (Haque 2004; Düzgüner and Şentepe 2015) and explorative studies on Abū Ḥāmid al-Ghazālī's conception of the soul (Abu-Raiya 2012; Keshavarzi and Haque 2013), the striking commonalities between the ninth-century physician Abū Zayd al-Balkhī's cognitive therapeutic approach and contemporary cognitive behavioral therapy (Badri 2013; Awaad and Ali 2015, 2016), and the potential usefulness and explanatory power of emergent accounts of consciousness (Brown 2013; Khan 2017) are available. Apart from drawing comparisons with contemporary thought, we continue to be at sea as to how we could consider Muslim scholarly works for IP theory building in a methodologically sound fashion. It is argued that the main obstacle manifests in the required adequacies in contemporary psychology, advanced Islamic theology and metaphysics, and the Arabic language to analyze these writings (Haque et al. 2016, 93; Kaplick and Skinner 2017, 201). If and only if the existing IP and Islamic scholarly literature in all relevant languages has been sufficiently appraised and critically edited may

we then channel our collaborative efforts into inventing our own contemporary wheel.

Islamic Cognitive Theories

Several circumstances beg for an interplay between Islamic scholarly and cognitive psychological thinking. First, the ubiquity of psychological sciences explains the complexity of all cognitive phenomena according to horizontal material causality, at the expense of any sort of vertical metaphysical causality. Ultimately, however, there are fundamental questions about the nature, function, and purpose of living beings—and their mechanics—that one is bound to run into an explanatory dead end when viewed merely from a naturalistic perspective (Yusuf 2018). Moreover, our understanding of how cognition arises from neurobiological substrates, and integrates into a conscious experience, and forms a unitary sense of self/personhood continues to be very limited (Qazi et al. 2018, 6). Islamic thought traditionally attributes this ability to generate a unified experience to not only the physical but also the metaphysical dimensions of the human being; it might be able to non-apologetically proffer intellectual impulses, informed by its holistic approach to explaining the origin, nature, and purpose of the different human faculties, for cognitive psychology. Eastern traditions have recently done so with great success. Second, cultures conceptualize the cognitive system differently, and the encounter of these distinct conceptualizations in an extremely diversified, globalized environment complicates their understanding each other. We thus not only require translators for languages but also translators for the conceptual vocabulary we use to describe our inner life, especially the wide-ranging realm of cognition.

Until now, however, ICTs seem to be underdeveloped since they lack commensurability with contemporary cognitive psychology, cognitive sciences, and the cognitive and behavioral neurosciences. Examples of emerging ICTs include the very recent interest in the various forms of intelligence and consciousness among Islamic scholars and Muslim physicists (e.g., Islam 2017; Chaudhary 2018). ICTs can reflect a vast discourse at the crux of Islamic metaphysics, advanced theology, epistemology, ethics, and cosmology, probably discussed in theological texts which adopt a metaphysical and scriptural approach (Yusuf 2018), more than in spiritual or even legal ones. ICT discourse has not been suitably explored in the context of contemporary developments, and the lack of a clear idea of how such a "suitable" exploration is methodologically attained and connects Islamic thought with the social and hard sciences, especially in the cognitive realm, warrants the present scoping.

The main objective of ICTs is not as much centered on the cognitive functions that Islamic ideas and practices perform (albeit we recognize that such analytical and empirical findings will presumably be of most

interest to secular religious scholarship and scientific psychology), as on their indigenous Islamic description, explanation, and study. Relying on Carrie York Al-Karam's (2018) preliminary framework for defining branches within the nascent field of IP, we propose that, in the long term, ICTs can emerge to constitute the interdisciplinary space where cognitive psychology, cognitive sciences, and cognitive and behavioral neuroscience engage academically with various Islamic sources, sciences, and/or schools of thought, predominantly in the context of Islamic metaphysics, advanced theology, epistemology, ethics, and cosmology. Prospectively, this operational definition of ICTs can be replaced by a definition that explicitly names specific themes that characterize the ICT discourse, such as areas where common ground has been established or indigenous explanatory strategies of cognitive processes.

The first articulation that there should be a branch of IP dealing with cognition and physiology dates back to 1996 (Vahab 1996, 4–5) and has recently recaptured attention (Ishak and Yusoff 2015; Shehu 2015; Shamshiri et al. 2016; Younos 2017, 79). As we see it, there can be at least two main areas of fundamental questions with which ICTs may be concerned: (1) cognitive psychological theory that is Islamically informed and (2) Islamic religious practice that is cognitive-psychologically informed. It is our understanding that these areas can prioritize research efforts along a temporal spectrum. They represent a transfer of ideas from one discipline to the other and a construction of a comprehensive, integrated perspective based on the broader theme of cognition. Furthermore, solutions to problems in practical psychology and Islamic religious practice that are beyond the scope of each discipline can potentially materialize.

Islamically Informed Cognitive Theory

The inception of the "Orientation" phase is characterized by the engagement of Islamic thought with cognitive psychology. During this initial stage, the Islamic filter (Badri 1979) exerts the most effect, primarily to inform cognitive psychology. Islamically informed cognitive theory may be subdivided into two groups of issues: "The evaluation of cognitive psychological theories and models by Islamic scholarship" and "the development of a stand-alone Islamic cognitive paradigm." The former comprises a communication, comparison, and an evaluation of concepts and explanations in cognitive psychology with Islamic scholarship, and hence constitutes the initial step toward creating commensurability. This is the domain where a common language has to be advanced and disciplinary assumptions have to be unearthed, initially by explicating both the psychological and Islamic perspective and mapping them over each other. We suggest a factual analysis from a philosophical, theological, and psychological angle, as well as a neuroethical evaluation.

A selection of popular ideas for discussion at the factual level of analysis includes the representation of computational operations in the mind, simulation of contents and experiences, minimization of prediction error, information-processing functions that map onto allegedly modular brain regions, embodiment of higher order cognitive processes in sensorimotor control processes, and a potential continuity of lower and higher cognition. Furthermore, methodological tools such as different kinds of explanation (causal/aetiological, contrastive, manipulationist, functional and evolutionary, [neo-]mechanistic, and computational) and levels of brain organization (from molecules to synapses, neurons, networks, maps, systems, the central nervous system, and behavior) as applied to research in cognitive neuroscience have not yet been collated with Islamic thought. The development of commensurability will undeniably present the following exemplary questions: Do terms such as "intellect" from an Islamic scholarly perspective and "cognition" from a cognitive psychological angle describe the same entity? Since brain mechanisms appear to explain the biological aspects underlying cognition, how do explanations of a biological nature map onto Islamic ideas? To what extent can we pose a nonexclusive explanatory pluralism? Which criteria can guide us in our research to avoid straying from the methodological naturalism of modern science to making assertions about the metaphysical nature of God's creation and its inherent secrets? Toward the more practical dimensions, what, for instance, is our matrix for differentiating diseases of the brain and cognition from those of spirituality/"the heart"?

Along with the development of commensurability at the factual level of analysis, there ought to be an Islamic bio-/neuroethical layer of analysis or *fiqh* (jurisprudence or moral law) of cognitive scientific experimentation that assesses concepts, research objectives, and experimental practice with regard to their individual and societal implications. This area needs to be solidly grounded in Islamic ethics and many concerns will likely overlap with themes in Islamic bioethics. General principles need to be devised relating to the general thrust of such research, with specific rulings requiring specific discussion and decisions. This may involve (1) principles relating to the researcher (this would return to some variation of *adab al-tabīb*/professional ethics), (2) principles relating to the topic (out-of-bounds areas of research that are *a priori* impermissible, e.g., effect of extramarital sex on an unhappy marriage; risk-benefit in terms of more questionable areas of research), (3) principles relating to the subject (harm/benefit, autonomy, principle of least harm, rights, and so on), and (4) principles relating to the intervention (likelihood and extent of harm, "medicating with the haram," and so on).

One example of an issue within the Islamic ethics of cognitive psychology and neuroscience is cannabis research that scrutinizes the prerequisites of recreational and medicinal cannabis consumption. Can Muslim

neuroscientists conduct research on the link between pharmacological enhancement of endogenous and exogenous cannabinoids and goal-directed behavior? Studying the dose-dependent nature of cannabinoids' reward-related psychological effects can not only bear implications for explaining and treating motivational disorders, but also for cannabis decriminalization (Kubilius et al. 2018). Leaving aside that the Islamic permissibility of cannabis use can be debated in and of itself, such research potentially conflicts with Islamic legal maxims and precepts if its rationale is to simply push cannabis decriminalization policies for *recreational* cannabis use. However, the case differs when this research aims to elucidate that the societal harm of cannabis consumption outweighs its benefits (following the precept: "repelling harm is given preference over obtaining benefit," "*Dār'u al-Mafāsid muqaddam 'alā jalb al-Masālih*") or to develop treatments for motivational disorders (clinical use). As such, Muslim neuroscientists might not take issue with research that provides more information on whether cannabis is truly useful in medicinal settings, while maintaining its harm societally and the opposition to its decriminalization. Here, a critical question is whether it would be considered to fall under *al-tadāwi bil muharram* (medicating with the haram), which, according to some jurists, is permissible when alternatives do not exist, but here is being utilized not for direct medicating, but to see if such medicating is effective. It is this "one-step-removed" extension of the legal principle that needs to be separately considered as part of the *fiqh* of experimentation.

Muslim neuroscientists are likewise challenged by the experimental practice behavioral neuroscience entertains. For instance, heterochronic parabiosis is a classical method in which the cardiovascular systems of two differently aged rodents are surgically joined, and which has recently been employed to rescue cognitive impairments in an aged animal through exposure to blood of a younger conspecific (Villeda et al. 2014). As we see such highly invasive methods now combating age-related cognitive decline, we must (re-)evaluate their ethical admissibility. Similar developments will materialize with state-of-the-art methods like human brain organoids, which are *human* stem cell–derived brain-like structures that can be implanted into a *mouse* brain. This model is associated with much enthusiasm, and the first attempts are under way to put it to use for preclinically modeling cognitive dysfunction (Mansour et al. 2018). We should not only pour resources into evaluating our concepts and tools but also into establishing positions on prospective ethically problematic practices, before Muslim neuroscientists are faced with them in the flesh.

The second group of issues within Islamically informed cognitive theory considers the use of Islamic scholarship to construct an Islamic cognitive paradigm. This domain of ICTs employs the IP approach (Skinner 1989, 2018) and thus derives its content from early Muslim scholars' works,

especially texts by the *mutakallimūn*, Sufis, and physicians. Scholars that may be of immediate interest for the construction of an Islamic cognitive paradigm are Abū Yaʿqūb bin Isḥāq al-Kindī and Abū Ḥāmid al-Ghazālī. This may denote the transition from the "Orientation" to the "Preparation" phase of the IIS interdisciplinary research process. An Islamic explanation of cognition and the involvement of cognitive processes in mental phenomena such as religious experience can be a result of the synergy of Islamic and psychological disciplinary insights in this group of issues. However, this is a rocky road with major conceptual and methodological challenges and laborious questions that lie ahead of us that must be prioritized and treated with the appropriate competence (including Islamic and secular philosophers of science and epistemologists) as we proceed.

The conceptual challenge in this second group of issues predominantly concerns the principles of deciphering psychological content from the Islamic texts and our definition of "Islamic." Here, one needs to clearly distinguish between primary sources (scripture) and secondary models, the latter being more systematized, and also incorporate "foreign" models to a greater or lesser extent (Avicenna, Ghazālī). What are the criteria we should have at our disposal to decide whether something is authentically Islamic and when an erroneous labeling is in place? Can a study that investigates the cognitive processes that occur during *Qur'ān* memorization (Salehuddin 2018) or a study that decodes the brain mechanisms underlying religious cognition be deemed "Islamic," or should we instead speak about Muslim religious experience? Can we extrapolate psychological concepts, such as a possible dichotomy between cognitive and affective processes, from Islamic texts? How do we avoid projecting all sorts of modern ideas on these concepts, given the diversity of significances the terminology may carry or allow? When the Islamic sources do not provide further hints toward the cognitive architecture of a concept, how do we integrate cognitive psychological data into the Islamic cognitive paradigm?

A careful discussion of contemporary psychological concepts during the evaluation phase and a subsequent juxtaposition of these concepts with a psychological "reformulation" of early Islamic scholarship may lead to the conviction that disciplinary insights are at odds. The following questions and the add-adjust-connect integration techniques may frame inquiries into an integration of divergent views: How did early Muslim scholars arrive at their implicit psychological concepts? How do we reconcile Islamic concepts with potentially contradictory empirical data from cognitive psychology? How strong should the influence of cognitive sciences be on modern Islamic studies after all? What sort of evidence from cognitive psychology is deemed acceptable to justify a departure from the traditional interpretation of a concept among Islamic scholars? Some of these issues are addressed in adjacent fields (Islamic bioethics, Islam and Science discourse, and so on); consider, for instance, how

novel biological evidence has changed traditional scholarly views on ensoulment (Yusuf 2018).

Apart from concepts and theories, the methods that were instrumental to reach conclusions are another source of disagreement between disciplinary insights. A divergence from standard methodologies to (re-)interpret results may be required. The intriguing question here is how an Islamic cognitive framework may incorporate empirical data that are provided by both cognitive psychology (for instance, empirically driven models of sensation, perception, attention, motivation, decision making, problem solving, learning, memory) and the traditional Islamic sciences (for instance, autobiographical narratives of experiential knowledge in poetry and diaries, instructional works for spiritual development of the Sufis). Anomalous findings between disciplines need to be explained. For instance, given that reductive physicalism limits its focus to observable brain activity, and monism equates this activity with cognition, can we make use of such research, while further acknowledging metaphysical effects on cognition and brain? Does it follow that an Islamic interpretation of empirical results, which incorporates the naturalistic outlook but goes beyond it to include elements of Islamic cosmology, is hence crucially distinctive?

Cognitive Psychologically Informed Islamic Religious Practice

The second major area of fundamental questions utilizes cognitive psychological knowledge to inform Islamic religious practice—possibly from within an Islamic cognitive paradigm. One case relates to executive functions (inhibitory control, working memory, or cognitive flexibility), which are of interest when ethically disparate intentions for a given action are competing and regulation of cognitive processes is necessary to establish and maintain *ikhlās*/sincerity in action. Executive control even takes center stage within the interdisciplinary team research process itself when discourse management and a conscious monitoring and regulation of our own cognitive processes (metacognition) and communication and coordination of various ideas and opinions (team metacognition; Keestra 2017a) is critical.

In the far-reaching realm of psychotherapy and counseling, initial work on cognitive restructuring from an Islamic perspective has been carried out (Hamdan 2008), and many spiritual and nonspiritual versions of mindfulness-based practices have attracted enthusiasm among Muslim psychologists. This trend is referred to as the Californian Buddhist Sufi Paradigm and does not sit well with several interest groups, such as those that take issue with the theoretical grounding of mindfulness in Buddhist philosophy (Skinner 2010). Arguments for (e.g., its abundant health benefits) and against (e.g., the existence of Islamic contemplation

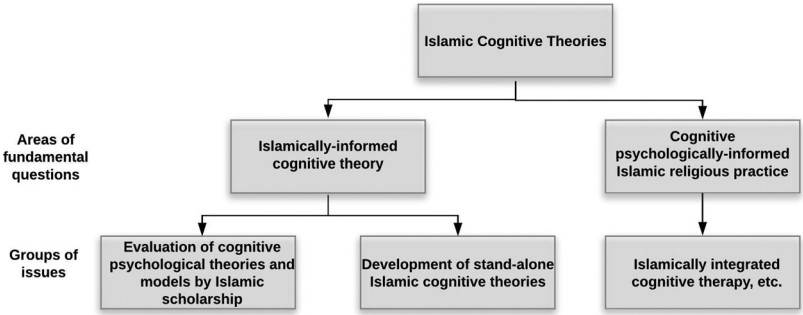

Figure 3. Unrealized scope of Islamic cognitive theories.

practices—which yet seem to differ in their aim to increase knowledge rather than relaxation) the Islamic appropriateness of these practices should be weighed to elucidate if the cognitive aspects of mindfulness-based practices can be utilized by Muslim therapists and Islamic authorities for Muslim patients and clients (see Figure 3).

Discussion

We have outlined an interdisciplinary research methodology that aims at guiding the establishment of the theoretical foundation of novel areas of basic research within the nascent field of IP and, in particular, to initiate a research program in IP that centers on cognition and physiology. We have come to term this methodology the SALAAM Framework. The logical architecture of this constructive approach has been informed by the IIS Model of Interdisciplinary Research. This model is appropriated for IP by applying the model's research phases and fundamental techniques for the integration of disparate bodies of knowledge (identification of common ground) to methodological approaches in contemporary IP. Based on the example of ICTs, which we hope will evolve into a subject with its own right, we have outlined how the SALAAM methodology can be used to envision the cross-fertilization of ideas from cognitive psychology, cognitive science, and behavioral and cognitive neuroscience with Islamic studies.

The Project of Interdisciplinary Construction of IP Theories

There are indeed models apart from the IIS model to engage contemporary psychology and Islamic thought in an interdisciplinary fashion, and to map the building blocks that need to be focused on when defining IP and the scope, methodology, and tools of its branches. Carrie York Al-Karam (2018) has proffered the Multilevel Interdisciplinary Paradigm (MIP; Emmons and Paloutzian 2003; Paloutzian and Park 2013)—a model rooted in the psychology of religion and spirituality. The enormous

amount of IP literature that is published in journals of this discipline merits the exploration of the MIP. Over time, a conviction may materialize that a model that is suited for research within the psychology of religion and spirituality in the United States may be more appropriate for contemplating aspects of the relationship between Islam and psychology than a model that is particularly ripe for handling empirical results from basic research by the natural, life, and social sciences in prevailingly secularized Europe. However, this can also be a distinctive strength of the IIS Model of Interdisciplinary Research when considering the scope of ICTs.

Both interdisciplinary models have in common that they evolved from the Western structure of knowledge, which might be contested when taking into account its historical development (Grosfoguel 2015) and the defining anatomy of the Islamic sciences (Ramadan 2016). The project of interdisciplinary construction can unwittingly bring in paradigmatic assumptions of human nature that are implicit in contemporary psychology. One alternative may be to construct a uniquely Islamically grounded theory based on branches of knowledge that already operate within the Islamic paradigm (Rothman and Coyle 2018). However, the criticism that interdisciplinary models are not entertaining a holistic approach has to be forestalled: their very value lies in the consideration and—if justified—harmonization of disparate perspectives across disciplines. Furthermore, it is possible that the way interdisciplinarity or any other contemporary integration methodology marries insights from distinct disciplines will become entirely redundant if we resort to the works of early Muslim scholars in the "Preparation" phase of the research process, and perhaps discover that these scholars had developed their own distinguishing framework in which mental processes and behavior are conceptualized (e.g., in the guise of *ʿIlm al-nafs*, *Nafsiyāt*), and which we can explicate in a way that meets the requirements of modern psychological inquiry. This applies equally to contemporary Arab writings such as the intellectual heritage of Yusuf Murad who attempted to articulate an *ʿIlm al-nafs al-takamuli*, an integrative psychology that blends Islamic and psychoanalytical sources, in postwar Egypt (El Shakry 2018, 23).

The Distinctiveness of Islamic Psychologies

Where do Islamic psychologies differ from mainstream psychology and, also, how are they similar to and different from Christian psychology? First, one basic difference is the metaphysical and epistemological framework in which the view of the human is grounded: "*self qua self*" versus "*self qua Ultimate Reality*." Islamic psychologies are rooted in the Islamic intellectual heritage that is rooted in Islamic belief. The Islamic construction of the human entity—and its fundamental relationship to the Divine as well as created existence—allows for the development of a thoroughgoing

psychology at fundamental, rational, cognitive, emotive, and behavioral levels. Second, another consideration is that Islamic psychologies are rooted in an Islamic epistemology that *necessarily* considers empirical evidence as a valid source of knowledge. Therefore, the construction of IP brings together difference sources of knowledge and this body of knowledge is vast in the construction of IP. This is also consistent with the way early Muslim scholars resynthesized Greek thought. The reason why they were very comfortable with dealing with Greek thought was because they could take what was philosophically and empirically sound and adopt it into an Islamically oriented health care practice. IP brings together Sufism, *kalām* discourses, legal discourses, and others. Third, Islam in its law and legislation necessarily considers cognition (*ʿaql*) as a prerequisite condition for *taklīf*, and significant impairment in it would permit *rukhas* (legal dispensations) or disability accommodations. Thus, mental illness and its considerations are built into the *sharīʿah* even in the primary sources.

Appraisal of the SALAAM Framework

A dimension that the presented interdisciplinary research methodology does not yet consider is the role of public engagement during the research process. Recent trends in interdisciplinary research have emphasized the benefit of participatory research approaches for knowledge enhancement (Collins et al. 2018; Tebes and Thai 2018). Incorporating the Muslim community—extra-academic participants—into the research process can harness a clearer vision for the contribution of ICTs to practical psychology and Islamic religious practice by sketching out the practical needs of the Muslim community. Another dimension is the use of nonacademic knowledge that commonly necessitates a *trans*disciplinary methodology, which allows all stakeholders to engage in the dialogue process (Keestra 2017b). It remains to be explored if, for instance, the experiential accounts of spiritual development of the Sufis qualify as nonacademic knowledge, and according to what criteria.

Prospectively, the "Orientation" phase of the SALAAM methodology should be employed in reasonable extents. It is not useful to parametrically screen through the vast array of cognitive processes with the aim to accomplish a one-to-one mapping of contemporary cognitive concepts and an Islamic evaluation and possible equivalent (Kaplick and Rüschoff 2018). At the time of writing, we consulted the cognitive atlas (https://www.cognitiveatlas.org/), which listed an astonishing number of cognitive concepts—816 to be specific. Other categorizations such as the NIH Research Domain Criteria (RDoC) system—a currently developed brain-based categorization of psychopathologies—summarized six constructs under the domain "cognitive system," with 10 subconstructs in

total. The number of concepts that should be scrutinized will probably lie somewhere between six and 816, and inquiries should be primed to target the main areas of cognitive psychology (sensation, perception, attention, learning, working memory, long-term memory, language, and so on). The same constraint should be applied to the juxtaposition of Islamic thought with the core organizational principles and explanatory strategies of cognition. The result of the "Orientation" phase is a shared databank of concepts and epistemic tools.

However, restricting the extent of the "Orientation" phase does not imply that this is an easy endeavor and doable in a few months using a small research project that has no major funding. It will take time to train researchers and scholars from both psychology and Islamic studies in the Islamic and cognitive sciences, respectively, and to acquaint them with the skills interdisciplinary methodologies offer to research teams (e.g., metacognition, team metacognition, philosophical reflection of disciplinary assumptions, reflective equilibrium). Hosting institutions need to gather experts in regular seminars (or ideally launch a research group) on neutral territory with highly skilled moderators, who consider the way both expert groups traditionally engage in discussions. For instance, communication problems may arise from different interests in IP. While many scholars will naturally seek to integrate modern psychology into Islam in order to understand better the religious/spiritual meaning of Islamic principles, many Muslim psychologists aim to integrate Islam into modern psychology in most part to advance Islamically integrated psychotherapy. Others have a transcultural interest in an Islamically informed psychology (cf. Islam Filter Approach; Badri 1979; Kaplick and Skinner 2017). This interdisciplinary work setting, too, has already been explored in adjacent fields, for instance, in Islamic bioethics by the Initiative on Islam and Medicine Work Group and the Scientific Discoveries and Theological Realities project (http://pmr.uchicago.edu/page/iim-wg) that have worked toward the creation of a common vocabulary, and can serve as a role model for ICTs.

We assert that the actual profit of knowledge will eventually manifest in the IIS "Preparation" phase, when an Islamic cognitive paradigm construction *based on the results from the "Orientation" phase* is attempted using the early Muslim scholarly literature. Such a paradigm must tackle the big questions: Can the Islamic texts provide any novel perspectives that can undogmatically inform long-standing debates in cognitive psychology? Would those perspectives bear any fundamental objection to the ontology of contemporary cognitive psychology? Are the arguments strong enough—even without propounding *a priori* religious truth claims—in order to trigger a revision of current ontology? Can we compare concepts even if the corresponding ontologies do not match or may even be incommensurate? With these questions in mind, the objective is not to criticize

contemporary psychology for the sole purpose of dissociation, but for increasing our knowledge of human psychology and for finding treatments for psychological dysfunctions while considering an intellectual tradition that is very much neglected in contemporary psychological discourse.

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