Integrative Complexity: An innovative technique for assessing the quality of English translations of the Qur'an

James W. Moore
Defence Research and Development CANADA

Peter Suedfeld
University of British Columbia, CANADA

Lianne McLellan
Defence Research and Development CANADA

ABSTRACT
This article introduces Integrative Complexity (IC), a measure of cognitive structure drawn from the discipline of social psychology, and reports on the application of this technique to the problem of Qur'anic translation quality assessment (TQA). Specifically, the IC scoring method was used to score selected Qur'anic verses relating to either one of two broad themes—"struggle" or "virtue"—from three different English translations of this text. These scores were then compared to determine whether the different translations captured the meaning of the Qur'an *in terms of its cognitive complexity* in the same way. The results of the exercise showed no statistically significant difference in IC scores among the three translations. In other words, they were essentially equivalent in terms of cognitive complexity. This exercise demonstrates the usefulness of the IC approach as complementary to traditional TQA methods in assessing the quality of English translations of the Qur'an.

KEYWORDS: equivalence, Integrative Complexity, Qur'an, translation quality assessment.

Introduction[1]

It is often said that the Qur'an—the foundational text of Islam—is untranslatable. Yet, browsing

through the aisles of the religious studies section in any bookstore, one is likely to find not one

but many English-language translations of this text. Kidwai (2011) references sixty complete English editions in his critical review of the field, and more versions will undoubtedly appear in the future as translators seek to correct and clarify the perceived shortcomings of the work of their predecessors. Yet, despite these best efforts, it is doubtful that any one edition will emerge and be universally recognized as *the* authoritative English translation of the Qur'an. There will always be many competing versions from which to choose.

What accounts for this seeming paradox: a text said to be untranslatable, yet reproduced in literally scores of translated English editions? And, more importantly, how does the non-Arabic reader decide which of these editions best serves the quest for understanding the meanings of the Qur'an? The choice is not inconsequential. Alternative translations, while linguistically sound from a grammatical, syntactic, and semantic standpoint, can nevertheless convey very different—and sometimes conflicting—impressions of the Qur'anic message. At one point in his account of the evolution of Islam, Aslan (2006) contrasts two translations of the Qur'anic *ayah* (verse) 34 of *surah* (chapter) 4 *An-Nisā* (Women) (denoted here as 4:34—this format will be used henceforth when citing Qur'anic verses) setting out men's obligations towards women. The first comes from translator Ahmed Ali (*Al-Qur'ān: A Contemporary Translation*, 1988 Princeton University Press edition) and the second from Majid Fakhry (*The Qur'an: A Modern English Version*, 2004 New York University Press edition):

> Men are the support of women as God gives some more means than others, and because they spend of their wealth (to provide for them)…As for women you feel are averse, talk to them suasively; then leave them alone in bed (without molesting them) and go to bed with them (when they are willing)… (Ahmed Ali, trans.)

> Men are in charge of women, because Allah has made some of them excel the others, and because they spend some of their wealth…And for those [women] that you fear might rebel, admonish them and abandon them in their beds and beat them… (Majid Fakhry, trans.) (quoted in Aslan 2006:69–70).

Aslan notes that "because of the variability of the Arabic language, both of these translations are grammatically, syntactically, and definitionally correct" (2006:70). Yet, he continues, the two

translations are markedly different, the first more philogynistic, the second markedly more mysogynistic. This example demonstrates that two translators may render the same source text (ST) very differently, depending upon the cognitive prism through which they filter that ST.

This leads us back to the question: how do we choose among competing Qur'anic translations? Or, to put it somewhat differently, how can we determine what constitutes a "good" translation of the Qur'an, to better inform our choice among the alternatives? In the next section, we briefly survey some of the traditional approaches taken with respect to Qur'anic *translation quality assessment* (TQA), after which we introduce our own unconventional method of Qur'anic TQA drawn from the discipline of cognitive social psychology: a measure of cognitive structure known as *Integrative Complexity* (IC). IC is a dynamic characteristic of how individuals or groups process information, solve problems, and make decisions (Suedfeld 2010). It is an aspect of the *structure* of thought rather than its *content*. To demonstrate the application of this innovative technique to Qur'anic TQA, we applied IC to the analysis of selected verses from three different English translations of the Qur'an. Prior to detailing this, we set out the hypothesis to be tested and the method used in the analysis. Specifically, we explain the rationale behind the choice of the three English translations used here as well as the criteria for selecting the verses for IC scoring, based on their relevance to either one of two broad themes: *struggle* or *virtue*. We also outline the procedures used to derive the IC scores of these excerpts. Next, we report on and discuss the results of the IC analysis, answering the central question of the comparison as to whether the different translations capture the meaning of the text *in terms of its cognitive complexity* in the same way. As we discuss in the concluding section, the results of the exercise presented here speak to the appropriateness of IC as an analytical tool—complementary to traditional Qur'anic TQA approaches—in assessing the relative quality of competing English translations of the Qur'an.

Before proceeding further, a word with respect to the authors. We are not translators. We approach the problem of Qur'anic translation quality assessment from the standpoint of political psychology, in the hope that the insights we bring from this discipline may in some small way contribute to the enrichment of the field of Qur'anic translation studies.

122

Traditional Approaches to Qur'anic Translation Quality Assessment (TQA)

How have "good" translations of the Qur'an traditionally been identified? To answer this, we must delve into the realm of Qur'anic *translation quality assessment* (TQA). A cursory review of the field provides examples of a wide variety of approaches. The *subjective-intuitive* or *mentalist* approach—in which translation quality is dependent first and foremost upon the translator's personal knowledge and interpretive skills as well as artistic-literary intuition and competence (House 2001: 244; House 2009: 222)—seems to be a common line of attack (for examples of this approach, see Hosni 1990; Iqbal 2000; Rippen 2004; Mohammed 2005). Kidwai explains that the "rationale and genesis" of his critical review is to "identify the ideological and sectarian affiliation, mindset, features, and strengths and weaknesses of every translator" (2011: xvii). Characteristic of his subjective approach is his harsh review of Abdullah Yusuf Ali's *The Meaning of the Glorious Quran: Translation and Commentary* (1934) (Kidwai 2011:16–34). He does not critique Ali's translation per se; indeed, he rarely refers to the target text (TT) in his assessment. Rather, he takes strong exception to Ali's exegesis of the meaning of the Qur'an as expressed in the commentary accompanying the TT. He denounces Ali's views as "apologetic" and "pseudo-rational" and contrary to orthodox Muslim articles of faith (Kidwai 2011:26), at least as he (Kidwai) understands them.

In reviewing A.J. Arberry's *The Koran Interpreted* (1955), Kidwai must tackle the quality of the TT itself (2011:258–270), for the simple reason that Arberry does not provide an interpretive commentary to accompany his translation, preferring to let the message of the Qur'an speak for itself. In general, Kidwai judges Arberry's translation to be "rich in stylistic qualities and sympathetic in its stance on Islam…[making it]…superior to other translations of the Quran rendered by Orientalists" (2011:268). Nevertheless, he says it suffers from some "serious incongruities" that detract from its strengths (Kidwai 2011:259): mistranslation and omission of certain Qur'anic words, too literal translation of some Qur'anic expressions, the use of archaic and obsolete words and expressions from the King James Bible, and the inappropriate inclusion of Christian theological terminology more generally (Kidwai 2011:259–266 passim). Arberry's mistranslations, in Kidwai's view, serve to distort and twist the meaning of some Qur'anic verses

123

and are "not only unpardonable but also inexplicable" given Arberry's command of the Arabic language (2011:265).

To back up his charges, Kidwai applies an anecdotal method in which he randomly selects alleged mistakes in Arberry's translation and then offers what he claims—without substantiation—is a superior translation alternative. For example, Arberry translates *ayah* 9:64 as "the hypocrites are afraid, lest a Surah should be sent down against them, *telling thee* [Kidwai's emphasis] what is in their hearts" (quoted in Kidwai 2011:263). The "correct" translation, Kidwai insists, should read as "the hypocrites are afraid, lest a Surah should be sent down about them, showing them what is in their hearts" (ibid.). This is the sum total of his assessment of this particular verse. He offers no evidence or rationale to justify his assertion that Arberry's translation is incorrect or that his own alternative is correct. The reader is expected to accept without question that Kidwai's mastery of the Arabic language and his understanding of the import of this Qur'anic verse are greater than Arberry's. This is typical of the mentalist approach.

In contrast, Badr (1994) provides an example of a systematic and rigorous comparative analysis within the *linguistic-textual* tradition, in which the ST and TT are compared in order to determine the "syntactic, semantic, stylistic and pragmatic regularities of transfer" (House 2009:223). He adopts as his underlying theoretical framework House's four-tiered functional pragmatic model of TQA (House 1981; House 1997). He undertakes an in-depth description and explanation of a sample TT, narrowly focusing on the same verses (109:1–5) rendered in six competing English language translations. He notes that, for the translators, "the difficult task is how to render the *pragmatic*, *semiotic* and *cohesive* aspects of the *Surah*, how to convey the *intentionality* through fidelity to the *phonological*, *grammatical* and *textual* factors that enhance the *unity* and maintain the *musicality* of the text [original emphasis]" (Badr 1994:12). Through his intensive analysis, he concludes that the translators have fallen short in this task, leading him to the more general conclusion that the Qur'an cannot be translated, only interpreted.

Another exemplar of the *linguistic-textual* school of Qur'anic TQA is the work of Abdul-Raof (2001). In his meticulous study of Qur'anic discourse, he outlines some of the flaws inherent in the general translation strategies used by English translators of the Qur'an (Abdul-Raof 2001:22–37). He concludes that "Qur'an translations harbour many culturally and linguistically induced errors. These errors also arise from lack of competence in Arabic syntax, morphology, and semantics, as well as from failure to capture the stylistic, pragmatic, and figurative aspects of the Qur'anic language" (Abdul-Raof 2001:36).

Greifenhagen takes a more sociological, discourse-based approach in which he examines the roles that non-Muslim and Muslim translators of the Qur'an have played in the evolving relationship of two "historically-situated communities of discourse" (1992: 286). He observes that Qur'anic translations have been "used as weapons in power struggles" between the West and Islam as well as within Islam itself (Greifenhagen 1992:285) (concurring, see Khan 1986:104). The motivation of non-Muslim, English-language translators from the seventeenth century up to the early twentieth century was to undermine a rival religion through attacks on Islam's foundational text and, later, on the "human author" of that text, Mohammed. English-language translations by Muslim translators emerged at the beginning of the twentieth century as counters to these earlier Christian polemics and tools in the struggle between orthodoxy and heterodoxy within Islam (in particular, in response to the unorthodox challenge of the Ahmadiyyans). Greifenhagen's assessment of the sociocultural roles of translations and translators as they relate to English-language Qur'anic translation demonstrates the larger truth that "translation is a dangerous game that seeks to manipulate readerships for and against texts in the interests of specific cultural identities" (Greifenhagen 1992:286).

Mohammed (2005) echoes Greifenhagen's conclusion regarding the use of translations as weapons in inter-communal power struggles. With regard to Yusuf Ali's 1934 translation of the Qur'an, for example, Mohammed notes that "writing at a time both of growing Arab animosity toward Zionism and in a milieu that condoned anti-Semitism, Yusuf Ali constructed his oeuvre as a polemic against Jews" (Mohammed 2005). As a further example, Mohammed describes the Saudi-financed al-Hilali-Khan translation (*The Noble Qur'an in the English Language*, 1996

Darussalam Publishers edition) as reading "more like a supremacist Muslim, anti-Semitic, anti-Christian polemic than a rendition of the Islamic scripture" (ibid.).

What is Integrative Complexity?

As this brief overview demonstrates, many different approaches have been used to assess the quality of English-language Qur'anic translations. We would like to offer what we believe to be an innovative alternative for the consideration of scholars in the field. Ours is an interdisciplinary approach in which the methods and insights of cognitive and social psychology are combined with those from translation studies to tackle the challenge of Qur'anic TQA. For this, we adopt and apply a measure from cognitive social psychology known as *Integrative Complexity* (IC). Cognitive psychologists have for some time recognized and studied complexity of thought as a crucial aspect of human information processing. In general, higher complexity is associated with such characteristics as openness to new information, nuanced judgments, and tolerance of uncertainty. It should be noted that the cognitive complexity tradition views its domain as the structure, not the content, of thought. Simply put, *any* opinion or viewpoint can be held and expressed dogmatically or single-mindedly, or, on the contrary, flexibly with nuance and respect for other views. Consequently, the level of conceptual structure is independent from the content of the specific viewpoint being expressed (McDaniel & Lawrence 1990).

In general, IC is viewed as a state variable, not a static personality characteristic. It varies dynamically with the influence of events and conditions, both internal (e.g., fatigue, anger, or illness) and external (e.g., traumatic stressors, time pressure, or information overload). Second, IC is scored not from self-report measures but from texts produced in the ordinary course of events or professional activities of the source (e.g., political speeches, interview transcripts, and memoirs). This avoids problems such as biased responses due to participants' expectations about the study or their desire to impress the experimenter (Suedfeld, Tetlock, & Streufert 1992).

The overall level of complexity of a person (or, in this case, a translation) can range from 1 to 7, as determined by the mean complexity of the passages (usually paragraphs) being scored for that

person/translation. The level of complexity of a passage is based on the presence of two characteristics: *differentiation* and *integration*. A score of 1 denotes one-dimensional reasoning, that is, no differentiation or integration (e.g., "Handcrafted furniture is expensive because there are few skilled artisans willing to work at this time-consuming craft."). A score of 3 denotes differentiation, the ability to perceive different dimensions within or perspectives about a topic (e.g., "Handcrafted furniture is expensive in part because there are few skilled artisans and in part because most people do not have the good taste to appreciate high quality work."). A score of 5 denotes differentiation *and* integration, the explicit perception of connections among the dimensions or perspectives (e.g., "The market value of handcrafted furniture is determined jointly by the willingness of suppliers to produce such products at varying prices and the willingness of buyers to purchase such products at varying prices. In technical terms, price is the intersection of the supply and demand curves.").[2]

Because IC is a measure of state as opposed to trait complexity, research in this domain typically focuses on how IC changes over time and/or under various circumstances, and on how it differs between individuals or groups. In the field of political psychology, for example, numerous studies designed to analyze and forecast adversarial versus cooperative intent and decisions of leaders and leadership groups have shown that increases in leaders' IC tend to precede cooperative intent whereas decreases precede conflict. This pattern has been found in confrontations involving full-scale international wars, successful peace negotiations, domestic political violence, and terrorist attacks (reviewed in Suedfeld 2010).

However, that is not the thrust of our study. We are not concerned with internal and external circumstances that influence IC levels in other research contexts, that is, we are not trying to discover how these various influences *change* the cognitive structure of selected texts. Rather, our goal is to determine whether alternative English translations of the Qur'an are *essentially equivalent* in their level of structural complexity.

---

[2] Scores higher than 5 were not found in this study and are therefore not explained here. This is a greatly simplified description of the IC scoring procedure. For a complete explanation, see Baker-Brown et al. 1992, from which the examples are taken.

James Moore, Peter Suedfeld, Lianne McLellan, Integrative Complexity:
 An innovative technique for assessing the quality of English translations of the Qur'an, 120-144.

Hypothesis

To restate this goal more broadly, the point of the IC scoring exercise that follows is essentially to determine whether a translation is "good". Nihamathullah, whose Ph.D. dissertation critically analyzes the linguistic and literary aspects of translation for 13 English renderings of the Qur'an (Nihamathullah 1999), sets out a two-pronged approach to comparing selected translations: (a) comparing the ST to a TT, and (b) comparing various TTs of the same ST. He hypothesizes that "when the source text (i.e., the Qur'an) is one and same [sic], hypothetically speaking, there should not be much room for variations either between a particular translation and the original or between the different translations except for minor changes of no great importance" (Nihamathullah n.d.:para. 11). This hypothesis reflects our understanding of the translation quality standard of *equivalence*. Translation equivalence is a central yet controversial concept in translation studies (see Kenny 2009 for an overview of this topic), and it is beyond the scope of this study to take up this ongoing debate. Nevertheless, our sense of translation equivalence corresponds to that underpinning House's functional-pragmatic model of TQA:

> a concept clearly reflected in conventional everyday understanding of translation, i.e., the average "normal," i.e., non-professionally trained person thinks of translation as a text that is some sort of "representation" or "reproduction" of another text originally produced in another language, with the "reproduction" being of comparable value, i.e., equivalent (House 2001:247).

In other words, for non-specialists, the TT should be more or less "the same" as the ST. This is the standard underlying Nihamathullah's hypothesis above.

The first task Nihamathullah identifies—comparing an ST to a TT—has been addressed to a limited extent in previous IC studies. Comparisons of official translations with source documents in several European languages have not found significant differences in IC scores (Suedfeld et al. 1992). Nor have significant differences been uncovered with respect to official translations produced by professional translators (Suedfeld 2010). These findings offer some empirical support for the hypothesis that, if a TT is technically correct in terms of definition, grammar, and

128

syntax, its IC score will not differ significantly from that of the non-English-language ST. Ideally, we would like to replicate these analyses and compare the IC scores of English translations of the Qur'an with that of the Qur'an in its original Arabic. This requires the services of an individual who not only has the requisite Arabic linguistic skills but is also a certified IC scorer. Clearly, the required skill set limits the pool of researchers from which to choose. Though for a variety of reasons we were unable to engage such a multi-talented individual for this exercise, an interested Arabic speaker willing to devote some 40 hours to instruction and practice via the online IC certification course could acquire the necessary scoring skills to pursue further work in this field.

This still leaves Nihamathullah's second task: comparing various TTs of the same ST. Thus far, relatively little scholarly attention has been devoted to this task. We hope to begin to fill this research gap by scoring a common sample of verses from three English editions of the Qur'an using a team of certified IC scorers. More formally, we tested the following general hypothesis:

> Assuming that alternative English translations of a non-English language ST are technically correct, the *underlying cognitive structure* as indicated by the level of Integrative Complexity of the TTs should be equivalent.

In the course of testing this general hypothesis, we considered a secondary hypothesis. As mentioned above, previous studies have indicated that decreases in leaders' IC tend to precede conflict while increases in IC tend to precede cooperation. This suggested the following hypothesis:

> The Integrative Complexity of Qur'anic excerpts related to the theme of *struggle* should be lower than that for excerpts related to the theme of *virtue*.

These themes are developed in the next section.

Method

The Source Text—The Qur'an

Why did we use the Qur'an as the ST in this exercise? Despite the centuries-old debate as to whether the Qur'an *should* be translated (see Tibawi 1962; Ayoub 1986; Moore et al. 2012), the reality is that this religious text is one of the most translated texts in human history, with non-Arabic editions appearing in most European, Asian, and African languages. Consequently, we had many translated English editions of the ST that could be compared. Moreover, there is essentially only one authoritative, source-language edition of the ST from which these translations have been made (at least by those translators who worked from the original Arabic text). The Arabic Qur'an was canonized in the reign of Uthman ibn Affan, a companion and third successor or Caliph to Mohammed, and this *Uthmanic recension* as it is known has remained the standard Qur'anic text ever since, eliminating for us the problem of first choosing among multiple versions of the ST. Thus, by using the Qur'an as the ST in this exercise, we had a wealth of candidate English TTs derived from essentially the same ST from which to choose.

Selection of the English Editions and Excerpts

From this pool, we chose three editions for this study: the Arberry (1955), Asad (1980), and the al-Hilali-Khan (1999) editions. The first two are generally considered to be "good" translations (at least as far as any translation of the Qur'an can be so regarded). As we were not in a position to independently judge the worth of any particular translation, we relied on the opinions as expressed in the literature of those with the knowledge and experience to assess the relative merits of these two translations (for the Arberry translation, see Abbott 1958; Guillaume 1958; Kidwai 1987; Mohammed 2005; for the Asad translation, see Boullata 1982; Kidwai 1987; Greifenhagen 1992; Iqbal 2000).

Unlike the Arberry and Asad editions, the al-Hilali-Khan edition has come under some critical fire. Referring to the translation as the "Wahhabi Koran", Schwartz claims that the translators

deliberately and radically distorted the Qur'anic text, and that contempt for and hostility towards non-Muslims suffuses their edition (2004:para. 16). In sharp contrast, Kidwai praises the al-Hilali-Khan edition as "an epitome of painstaking scholarship, editorial assiduity and attention to detail, and is destined to be used as a standard English translation of the Holy Quran for a long time to come" (2011:65).

As for the excerpts to be scored, we used the extensive index found in the Yusuf Ali 2001 edition as our general guide to the verses related to the themes of *struggle* and *virtue*. Specifically, we began with the index entry "Fighting (and striving) in the cause of Allah", then branched off to other cross-referenced entries including "Jihad", "Warfare [rules of]", and "Self-defence" (see Table 1). We did not use every verse or sequence of verses related to *struggle* cited in the index; we restricted our selections to the lengthier excerpts (13 in all) in order to facilitate IC scoring. To these, we added three more excerpts (Table 1, numbers 4–6)—passages that seemed to fit with the entries but were not identified as such in Ali's index—in order to increase the number of selections scored to 16, a sufficient number to allow a reasonable comparative analysis among the three translations. Next, we selected Qur'anic verses relating to the general concept of virtue, peace, and cooperation. Sixteen multi-verse excerpts were identified by searching index terms such as "The Righteous", "Charity", and "Conflict resolution" (see Table 1).

Table 1: Excerpts from the Qur'an for IC scoring.

Excerpt Number	Index Entry	*Surah*	*Ayah*
	Struggle		
1	Fighting (and striving) in the cause of Allah	2 *Al Baqarah* ("The Cow")	190–194
2	Fighting (and striving) in the cause of Allah	2 *Al Baqarah* ("The Cow")	216–218
3	Fighting (and striving) in the cause of Allah	4 *Al Nisā'* ("Women")	71–77

4	Fighting (and striving) in the cause of Allah	4 *Al Nisā'* ("Women")	88–91
5	Rules of warfare (additional)	4 *Al Nisā'* ("Women")	92–93
6	Rules of warfare (additional)	8 *Al Anfāl* ("The Spoils")	38–41
7	Rules of warfare	8 *Al Anfāl* ("The Spoils")	45–48
8	Rules of warfare	8 *Al Anfāl* ("The Spoils")	55–64
9	Rules of warfare	8 *Al Anfāl* ("The Spoils")	65–72
10	Rules of warfare	9 *Al Tawbah* ("Repentance")	1–6
11	Fighting (and striving) in the cause of Allah	9 *Al Tawbah* ("Repentance")	12–16
12	Fighting (and striving) in the cause of Allah	9 *Al Tawbah* ("Repentance")	24–26
13	Fighting (and striving) in the cause of Allah	9 *Al Tawbah* ("Repentance")	41–47
14	Fighting (and striving) in the cause of Allah	9 *Al Tawbah* ("Repentance")	120–123
15	Self-defence	42 *Al Shūrā* ("Counsel")	39–43
16	Fighting (and striving) in the cause of Allah	48 *Al Fath* ("Victory")	15–17
	Virtue		
17	Righteousness	2 *Al Baqarah* ("The Cow")	177–179
18	Fasting in Ramadan	2 *Al Baqarah* ("The Cow")	183–187
19	Pilgrimage	2 *Al Baqarah* ("The Cow")	196–203
20	Charity	2 *Al Baqarah* ("The Cow")	270–274

21	The Righteous	3 *Al 'Imrān* ("The House of Imran")	15–17
22	Forgiveness/The Righteous*	3 *Al 'Imrān* ("The House of Imran")	133-136
23	Forgiveness	3 *Al 'Imrān* ("The House of Imran")	159–160
24	Justice	4 *Al Nisā* ("Women")	135–136
25	Justice	6 *Al An'ām* ("Cattle")	151–152
26	Patience	16 *Al Nahl* ("The Bee")	125–128
27	Parents, being good to	17 *Al Isrā* ("The Night Journey, Children of Israel")	23–25
28	Prayer	22 *Al Hajj* ("The Pilgrimage")	77–78
29	Charity	33 *Al Ahzāb* ("The Confederates")	35
30	Conflict Resolution/ Justice	49 *Al Hujurāt* ("Apartments")	9–10
31	Charity	70 *Al Ma'ārij* ("The Stairways")	19–35
32	The Righteous	76 *Al Insān* ("Man")	5–22

Note: Terms in the "Index Entry" are taken from Ali (2004).

* Although Verse 134 is not listed in Ali's (2004) index entry for "The Righteous," his Footnote 453 to this verse begins "Another definition of the righteous…"

To test whether there were differences in IC across the three translations, arguably a random sample of verses could have been chosen for scoring. Instead, we deliberately chose two thematic types of verses—*struggle* and *virtue*—and two subsets of excerpts that appeared, in our subjective judgment, to be the best exemplars on these two themes. Why did we do this? Passages dealing with *struggle* are expected to be relatively low on IC, and thus show a smaller range of IC scores among the passages. With *virtue* passages, on the other hand, greater

variability and higher IC scores are expected. Looking at the two themes together subjects the three translations to a more rigorous test of the equivalency of IC scores across translations than looking at either theme on its own. Furthermore, by examining the IC scores of excerpts from these two conceptually juxtaposed subsets of passages, we could test whether there was a difference in level of IC between them as IC theory predicts.

The connotation of the theme of *virtue* is more or less self-evident, but that of *struggle* warrants more detailed explanation. Essentially, we were looking for entries that were in some sense related to the concept of *jihad*. This concept is held to have two very distinctive meanings. The word itself comes from the Arab verb *jahada*, meaning "to struggle or exert", and, in Islamic jurisprudence, it has been defined as "exertion of one's power to the utmost of one's capacity" (Ali and Rehman 2005:330). This can be interpreted, on the one hand, as referring "to religiously sanctioned aggressive war to propagate or 'defend' the faith" (an-Na'im 2002:163). In contrast, a second—and, many would argue, primary (ibid.)—meaning of *jihad* emphasizes self-exertion. Proponents of this latter meaning cite a *hadith* of Mohammed, in which he is believed to have said that the use of force in battle is a minor *jihad*, while "self-exertion in peaceful and personal compliance with the dictates of Islam (constitutes) the major or superior *jihad*" (K. Bennoune, quoted in Ali and Rehman 2005:330). Note, however, that some challenge the strength and authenticity of this *hadith*.

We do not propose to take a stand on this debate. Nor is it necessary. What is relevant to our analysis is that, rightly or wrongly, these two distinctive meanings have been ascribed to the term *jihad*. Given the dramatic contrast in meanings, this might give a translator greater latitude to shade Qur'anic verses relating to fundamental questions of war and peace as more or less aggressive or introspective, depending upon his or her interpretation of *jihad*. This semantic variability might also be reflected in greater variability in the cognitive structure of alternative translations.

The IC Scoring Procedure

The basic scoring unit for IC is the section of material that focuses on one idea, usually a paragraph. Either entire STs or randomly selected excerpts from the STs are copied and identifying information as to the originator, occasion, etc., is removed. The excerpts are then arranged in random order; when possible, excerpts from several STs are mixed together to make identification of the originator and the originating circumstances even less likely. They are then scored by qualified scorers.

In general, each scoring unit is scored on a 7-point scale, with higher values indicating higher complexity. A score of 1 indicates no differentiation; the author of the scored unit relies on simple, one-dimensional rules in thinking and decision-making. A score of 3 indicates differentiation, a clear specification of alternative, legitimate ways of dealing with the same information. A score of 5 indicates clear integration or connectivity between or among differentiated perspectives in the form of, for example, acknowledgment of mutual influence, negotiation, trade-off, causal attributions, or synthesis. A score of 7 indicates high-level integration in the form of an overarching principle pertaining to the connectedness of the differentiated viewpoints. Scores of 2, 4, and 6 denote transitional scores for passages that contain a hint of the criterion for the next higher score but in which the criterion is articulated implicitly instead of explicitly.

In this study, the scoring unit was an excerpt consisting of thematically related, sequential Qur'anic verses. To prepare the 48 excerpts for each thematic subset—16 *struggle* or 16 *virtue* excerpts common to each of the three translations—for IC scoring, they were put in random order, and information identifying the translation source of each excerpt was removed. The excerpts in each thematic subset were then scored. In studies using IC scoring, one coder typically scores all the selected excerpts, and a second coder independently codes a subset of the sample (e.g., 50%) to ensure that reliability between the coders is above $r = .85$. In the current study, a total of seven coders were involved in the scoring, and, after discussing any

discrepancies in their initial scores, they arrived at 100% agreement on the final scores for all excerpts. All scorers were blind to the hypotheses of the study.

Results

In the first stage of the analysis, scores for the 16 *struggle* excerpts were compared across all three English translations. Table 2 shows the results of these comparisons including the scores, agreement in scores, and deviations among them. The lowest possible score in the IC system is 1; the highest score reached by any of these translated excerpts was 3.

Table 2: IC scores for 16 *struggle* excerpts across three English translations.

Excerpt No.	Trans 1 Arberry 1955	Trans 2 Asad 1980	Trans 3 al-Hilali-Khan 1999	100% agreement?	Difference Scores (absolute value)		
					1:2	2:3	1:3
1	2	2	2	YES	0	0	0
2	2	1	2	NO	1	1	0
3	1	1	1	YES	0	0	0
4	1	2	2	NO	1	0	1
5	1	1	1	YES	0	0	0
6	1	1	1	YES	0	0	0
7	2	1	2	NO	1	1	0
8	1	2	1	NO	1	1	0
9	2	2	3	NO	0	1	1
10	1	3	2	NO	2	1	1
11	1	1	1	YES	0	0	0
12	1	1	1	YES	0	0	0
13	1	1	1	YES	0	0	0
14	2	3	3	NO	1	0	1
15	3	2	3	NO	1	1	0
16	2	3	2	NO	1	1	0

Because there were 16 excerpts and three translations, there were 48 possible pairwise comparisons of IC scores (i.e., Translations 1:2, 2:3, and 1:3). Of these 48 pairwise comparisons, 29 (60.4%) received identical IC scores. Although this may seem low at first glance, it is

James Moore, Peter Suedfeld, Lianne McLellan, Integrative Complexity:
An innovative technique for assessing the quality of English translations of the Qur'an, 120-144.

important to note that all but one of the pairwise comparisons (97.9%) fell within one point on the IC scale, indicating high similarity of IC across the three translations.

All but one of the discrepancies between scores was a matter of the existence or strength of an emergent higher score. Recall that the range of scores in the *struggle* subset was quite small: only 1 to 3. The difference between a score of 1 and 2 is the difference between no differentiation and emergent differentiation. In practical terms, this difference is small. The difference between a score of 2 (emergent differentiation) and 3 (clear differentiation) is also practically quite small. There was only one instance, in Excerpt 10, where there was a difference of two points, between Translations 1 and 2. Therefore, although there were slight differences among the scores the coders gave to the excerpts across translations, these differences were minimal, practically speaking.

In the next stage, we compared the scores for the 16 *virtue* excerpts common to all three English translations. Table 3 shows the results of these comparisons. The scores ranged from 1 to 4.

Table 3: IC scores for 16 *virtue* excerpts across three English translations.

Excerpt No.	Trans 1 Arberry 1955	Trans 2 Asad 1980	Trans 3 al-Hilali-Khan 1999	100% agreement?	Difference Scores (absolute value)		
					1:2	2:3	1:3
17	3	3	2	NO	0	1	1
18	4	4	3	NO	0	1	1
19	3	3	3	YES	0	0	0
20	4	3	3	NO	1	0	1
21	1	1	1	YES	0	0	0
22	3	3	3	YES	0	0	0
23	2	1	2	NO	1	1	0
24	1	1	1	YES	0	0	0
25	2	2	2	YES	0	0	0
26	2	2	2	YES	0	0	0
27	1	1	1	YES	0	0	0
28	3	3	3	YES	0	0	0
29	1	1	2	NO	0	1	1
30	2	2	2	YES	0	0	0

James Moore, Peter Suedfeld, Lianne McLellan, Integrative Complexity:
An innovative technique for assessing the quality of English translations of the Qur'an, 120-144.

| 31 | 2 | 2 | 2 | YES | 0 | 0 | 0 |
| 32 | 2 | 2 | 2 | YES | 0 | 0 | 0 |

As before, given 16 excerpts and three translations in this thematic subset, there were 48 possible pairwise comparisons of IC scores. Of these, 38 (79.2%) received identical IC scores. Further, all pairwise comparisons (100%) fell within one point on the IC scale, indicating high similarity of IC for the *virtue* passages across the three translations.

A mixed-model analysis of variance (ANOVA) using translation edition (3 levels: Arberry, Asad, and al-Hilali-Khan) as the within-subjects factor and theme (2 levels: *struggle* and *virtue*) as the between-groups factor was conducted to test for differences in IC across translations and to determine whether these differences were moderated by (i.e., depended on) the theme of the passage.[3] Results of the ANOVA revealed neither a significant main effect of translation, $F(2, 60) = .19$, *ns*, nor a significant interaction with theme, $F(2, 60) = 1.95$, *ns*. In other words, the IC scores among the three translations were statistically equivalent among both the *struggle* and the *virtue* passages.

Finally, we tested our secondary hypothesis that IC scores would be lower for *struggle* excerpts than *virtue* excerpts. An independent samples *t*-test—used to test the difference between two separated groups—revealed that the mean IC score was lower for the excerpts related to *struggle* ($M = 1.65$, $SD = .73$) than to *virtue* ($M = 2.17$, $SD = .13$), $t(94) = 3.15$, $p = .002$. The highly significant difference in IC between the two themes is especially noteworthy given the small sample size and restricted range, two factors that impede the sensitivity of the statistical test.

Discussion

Research using the IC scoring methodology has examined boundary conditions to its application, including whether the complexity of translated material is equivalent to the original source material (see, e.g., Suedfeld et al. 1992). To our knowledge, this is the first study to examine the

---

[3] We ensured that the statistical assumptions required for the results of the ANOVA are valid (i.e., normality and heterogeneity of variance).

IC scores of various translations of the same ST. We found only minor departures among the three translations in terms of their structural complexity and thus conclude that *the English translations of the Qur'an examined here are essentially equivalent in IC.*

All of the excerpts were very low in IC. No scores for the *struggle* passages surpassed 3, and no *virtue* passages scored greater than 4; 41 of 48 (85%) of the *struggle* scores and 31 of 48 (64%) of the *virtue* scores fell below 3. There are two important qualifications to this observation. First, the failure to find differences among translations could be due to the restriction of the range of scores. There was a low ceiling on the complexity of the excerpts scored, and this limited variability of scores may have made it more difficult to detect differences. It may be that when scoring various translations of the same ST that spans the entire scale of IC from lack of differentiation (an IC score of 1) to superordinate integration (an IC score of 7), differences among the translations would be found.

The second limitation to this finding pertains to understanding why the IC scores were so low. This may have been the case because the themes that the passages embody—*struggle* and *virtue*—relate to strong and integral parts of the Muslim faith, which, as with the foundational elements of any religion, are less open to question or "shades of grey" in thinking. It is unknown, then, whether these scores are representative of the Qur'an writ large or whether IC is lower in cases where these particular topics are discussed in the text. To answer this query, one would need to score the IC of a random sample of passages from all parts of the Qur'an. A comparison between the IC scores of excerpts from the Qur'an and from other foundational religious texts would also be interesting.

As a final note, the comparison of IC scores for the passages related to the two themes supports the secondary hypothesis that material dealing with topics such as struggle, competition, rivalry, and the like is lower in IC than material related to cooperation. Confirming this pattern in a religious text, so widely different from the political documents usually scored in IC studies, and translated from a language that has seldom been used in this research, is especially encouraging.

Conclusion

Recall that the aim of this exercise was to introduce an innovative technique to assess the quality of English translations of the Qur'an to help us determine whether particular translations of this text are "good." What, then, can we conclude from this investigation? We found no difference in cognitive structure, as measured by IC score, among the three selected English translations of the Qur'an examined here, despite any semantic or stylistic variability in their content. In other words, *the three translations captured the meaning of this text in terms of its cognitive complexity in the same way*. In this respect, therefore, they are equivalent.

The fact that these translations do not differ significantly (in a statistical sense) from each other in terms of cognitive complexity is reassuring from the standpoint of assessing whether or not they are "good". However, this comes with an important qualification. Conceivably, the translators in this instance—Arberry, Asad, and al-Hilali-Khan—may have got the message of the Qur'an "wrong". To put it differently, there may be a significant difference in cognitive complexity, but it may exist not between alternative English translations of the Qur'an but between these TTs and the ST itself. In other words, the ethnolinguistic filter of the target language (English) may be such that technically sound translations of the Qur'an will yield the same cognitive structure regardless of translator. However, that structure may differ significantly from the cognitive structure of the ST, rooted as the latter is in a different ethnolinguistic frame (Arabic). This has not been the case with English translations from other European languages, but it has not been adequately tested with the languages of non-European cultures such as Arabic.

The corrective, then, would be to test the hypothesis that, if the cognitive complexity of the ST and TT are equivalent, the IC scores of selected Qur'anic passages in Arabic should not be significantly different from that of the same passages in English. However, as discussed earlier, we were unable to engage the services of a trained IC coder who is also fluent in Qur'anic Arabic and who could carry out such a comparative assessment. The method presented here represents an indirect means for assessing the quality of Qur'anic translations when the requisite IC/Arabic

skill set is lacking. With this exercise, we have begun to establish a baseline of "good" (in terms of equivalent cognitive complexity) English translations that can be used for quality-assurance purposes for new translations (this baseline conceivably can be extended—with some effort—to include other existing complete English editions of the Qur'an). For example, if a new English-language translation of the Qur'an is published that differs significantly in terms of its cognitive complexity in comparison with these baseline translations, this should raise a red flag, prompting closer scrutiny of the new edition. This naturally leads back to the more traditional approaches of Qur'anic translation quality assessment described above, driving home the point that the innovative method introduced here is a complement to rather than a substitute for these traditional approaches. As part of a comprehensive translation quality assessment approach, Integrative Complexity may have much to offer the field of Translation Studies in grappling with the vexing problem of determining "good" English-language translations of the Qur'an and other texts. That, at least, is our hope.

Contact Information

Corresponding Author:
James W. Moore, LLM, PhD
Defence Research and Development Canada
Toronto, Ontario, Canada
James.Moore@drdc-rddc.gc.ca

Peter Suedfeld, PhD
Department of Psychology
The University of British Columbia
Vancouver, British Columbia, Canada
psuedfeld@psych.ubc.ca

Lianne McLellan, PhD
Defence Research and Development Canada
Toronto, Ontario, Canada

141

Lianne.McLellan@drdc-rddc.gc.ca

References

Abbott, Nabia (1958) 'Book Reviews: The Koran Interpreted', *Journal of Near Eastern Studies*, 17: 77–78.

Abdul-Raof, Hussein (2001) *Qur'an Translation. Discourse, Texture and Exegesis*, Richmond, Surry, UK: Curzon Press.

Ali, 'Abdullah Yusuf, trans. (2001) *The Meaning of the Holy Qur'an*, Beltsville, MD: Amana publications.

Ali, Shaheen Sardar and Javaid Rehman (2005) 'The Concept of *Jihad* in Islamic International Law', *Journal of Conflict & Security Law,* 10(3): 321–343.

an-Na'im, Abdullahi Ahmed (2002) 'Upholding international legality against Islamic and American *jihad*', in Ken Booth and Tim Dunne (eds) *Worlds in Collision: Terror and the Future of Global Order*, New York, NY: Palgrave Macmillan, 162–172.

Arberry, Arthur J., trans. (1955) *The Koran Interpreted*, New York, NY: Macmillan.

Asad, Muhammad, trans. (1980) *The Message of the Quran*, Chicago, IL: Kazi Publications.

Aslan, Reza (2006) *No God But God: The Origins, Evolution, and Future of Islam*, New York, NY: Random House Trade Paperbacks.

Ayoub, Mohammad (1986) 'Translating the Meanings of the Qur'an: Traditional Opinions and Modern Debates', *Inquiry*, 3(5): 34–39.

Badr, Basim Muftin (1994) 'A Critique of Six English Translations of a Qur'ānic Text', *Islamic Culture*, 68(3): 1–17.

Baker-Brown, Gloria, Elizabeth J. Ballard, Susan Bluck, Brian de Vries, Peter Suedfeld and Philip E. Tetlock (1992) 'The conceptual/integrative complexity scoring manual', in Charles P. Smith (ed.) *Motivation and Personality. Handbook of Thematic Content Analysis*, Cambridge, UK: Cambridge University Press, 401–418.

Boullata, Issa (1982) 'Book Reviews: The Message of the Qur'an', *The Muslim World*, 72: 246.

Greifenhagen, Franz Volker (1992) '*Traduttore Traditore*: An Analysis of the History of English Translations of the Qur'an', *Islam and Christian-Muslim Relations*, 3(2): 274–291.

Guillaume, Alfred (1958) 'Book Reviews: The Koran Interpreted', *The Muslim World*, 48: 248–249.

al-Hilali, Muhammad Taqui al-Din and Muhammad Muhsin Khan, trans. (1999) *Translation of the Meanings of the Noble Qur'an in the English Language*, Madinah, KSA: King Fahd Complex for the Printing of the Holy Qur'an.

Hosni, Abdel Moneim (1990) 'On Translating the Quran (An Introductory Essay)', *Journal of King Saud University*, 2(2): 93–134.

House, Juliane (1981) *A Model for Translation Quality Assessment* (2nd Edition), Tübingen, DE: Gunter Narr.

House, Juliane (1997) *Translation Quality Assessment: A Model Revisited*, Tübingen, DE: Gunter Narr.

House, Juliane (2001) 'Translation Quality Assessment: Linguistic Description Versus Social Evaluation', *Meta: Translators' Journal*, 46(2): 243–257.

House, Juliane (2009) 'Quality', in Mona Baker and Gabriela Saldanha (eds) *Routledge Encyclopedia of Translation Studies*, London, UK: Routledge, 222–225.

Iqbal, Muzaffar (2000) ''Abdullah Yūsuf 'Ali & Muhammad Asad: Two Approaches to the English Translation of the Qur'an', *Journal of Qur'anic Studies*, 2(1): 107–123.

Kenny, Dorothy (2009) 'Equivalence', in Mona Baker and Gabriela Saldanha (eds) *Routledge Encyclopedia of Translation Studies*, London, UK: Routledge, 96–99.

Khan, Mofakhar Hussain (1986) 'English Translations of the Holy Qur'an: A Bio-bibliographic Study', *Islamic Quarterly*, 30: 82–108.

Kidwai, Abdur Raheem (1987) 'Translating the Untranslatable: A Survey of English Translations of the Quran', *The Muslim World Book Review*, 7. Available online at [http://www.soundvision.com/info/quran/english.asp] (accessed 29 October 2012).

Kidwai, Abdur Raheem (2011) *Translating the Untranslatable: A Critical Guide to 60 English Translations of the Quran*, New Delhi, IN: Sarup Book Publishers.

McDaniel, Ernest, & Lawrence, Chris (1990) *Levels of Cognitive Complexity: An approach to the measurement of thinking*, New York, NY: Springer-Verlag.

143
© Crown copyright

Mohammed, Khaleel (2005) 'Assessing English Translations of the Qur'an', *Middle East Quarterly*, 12(2): 58–71. Available online at [http://www.meforum.org/717/assessing-english-translations-of-the-quran] (accessed 9 March 2014).

Moore, James, Lianne McLellan and Peter Suedfeld (2012) *Measuring the "Translation Effect": An Innovative Application of Integrative Complexity (DRDC Toronto TM 2012-114)*, Toronto, ON: DRDC Toronto.

Nihamathullah, A. (1999). *A critical study of selected English translations of the Holy Qur'an* (Unpublished doctoral dissertation), Madurai Kamaraj University, Tamil Nadu, India.

Nihamathullah, A. (n.d.) 'Translating the Holy Qur'an: Is there an ultimate translation of the Qur'an?' *The Lahore Ahmadiyya Islamic Movement*. Available online at [http://ahmadiyya.org/m-ali/quran-1917-ulti.htm] (accessed 31 July 2012).

Rippen, Andrew (2004) H-NET Book Review: Two New Translations of the Qur'an. Available online at [http://h-net.msu.edu/cgi-bin/logbrowse.pl?trx=vx&list=h-mideast-medieval&month=0412&week=c&msg=Z3KoihWpbwF7NrF5gWJ%2BeQ&user=&pw] (accessed 18 September 2012).

Schwartz, Stephen (2004) 'Rewriting the Koran: A Bigoted Saudi Translation', *The Weekly Standard*, 10(3). Available online at [http://jewsandmuslims.tribe.net/thread/be6c78e2-8b6b-478e-b291-421390f066a5] (accessed 29 October 2012).

Suedfeld, Peter (2010) 'The Cognitive Processing of Politics and Politicians: Archival Studies of Conceptual and Integrative Complexity', *Journal of Personality*, 78(6): 1669–1702.

Suedfeld, Peter, Philip E. Tetlock and Carmenza Ramirez (1977) 'War, Peace, and Integrative Complexity: UN Speeches on the Middle East Problem, 1947-1976', *Journal of Conflict Resolution*, 21(3): 427–442.

Suedfeld, Peter, Philip E. Tetlock and Siegfried Streufert (1992) 'Conceptual/integrative complexity', in Charles P. Smith (ed.) *Motivation and Personality. Handbook of Thematic Content Analysis*, Cambridge, UK: Cambridge University Press, 393–400.

Tibawi, Abdul Latif (1962) 'Is the Qur'an Translatable? Early Muslim Opinion', *The Muslim World*, 52(1): 4–16.