The world as we know it: The Culture – Identity – Metacognition Interface

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The World As We See It: The Culture – Identity – Metacognition Interface

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Abstract

Cultural knowledge allows people to engage the world seemingly effortlessly because their expectations for how their everyday experiences will unfold using oftentimes-tacit cultural scripts correctly predict their observations. People experience cultural disfluency when these culture-based predictions mismatch their observed reality. Cultural disfluency triggers increased systematic reasoning, reduces experienced inherence, and increases uncertainty about the world and one's self (the identities one has or might have in the future). Cultural disfluency is interpreted through the lens of identity—which identity is on the mind and which cultural mindset it links to is dynamically constructed in context. When tasks feel like 'me' things to do (identity-congruent), people interpret difficulty as signaling importance and persist. Conversely when tasks do not feel like 'me' things to do (identity-incongruent) or people feel uncertain about who 'me' is in the moment, they interpret difficulty as signaling impossibility and quit. The reverse is also true: Once an interpretation of experienced difficulty comes to mind, it influences who 'me' is (accessible identities). We discuss educational implications of our culture-identity-metacognition model.

Keywords: culture, metacognition, identity, motivation, cultural fluency, uncertainty, interpretation of experience, identity-based motivation, education

When offered a morning coffee, will you want one? If your friend invites you to her New Year's Party, will you know what to wear? People have an easy time simulating these situations. They feel that they know who they are and how to proceed in their everyday contexts. Hence, they do not feel that they need to wonder if they will want morning coffee or if they will know what to wear to a New Year's Eve party, and they do not question why they make the decisions they do. Indeed, experienced ease in imagining feeds into people's sense that they know their true self. Of course the reverse is also true. If, for whatever reason, people experience difficulty while attempting to imagine how they would respond to others or how others might respond to them, this experience undermines people's sense of certainty about themselves.

The current chapter focuses on the interface between culture, identity, and metacognition, the experience of thinking about one's thinking. Identities, who one was, is, and might become, are informed by culture. Culture outlines a set of expectations—for how everyday life unfolds, what has value and what is worth doing, including how what is worth doing should be done. When these expectations or predictions are matched by observations of unfolding reality, people experience fluency—things are as they should be. In contrast, when culturally rooted expectations are not met or are even violated, people experience disfluency, which signals a problem and results in a shift to systematic reasoning, increased uncertainty, and reduced sense of inherence – things are not as they should be. How these experiences of ease (fluency) and difficulty (disfluency) are interpreted is metacognition. Metacognitive interpretation in turn, is driven by cultural knowledge and accessible identities.

To preview, our core message can be summarized as follows. Problem signals such as experienced difficulty imply uncertainty as to how things will unfold. This experience reduces certainty that one knows oneself and certainty that the world is as it ought to be, and prompts a shift to systematic reasoning. Systematic reasoning is not the default – most thinking is associative and reflexive, it proceeds effortlessly and automatically in contrast to systematic reasoning, which is reflective and rule-based (e.g., Chaiken & Trope, 1999; Kahneman, 2003; Stanovich & West, 2000; for examples of shift to systematic reasoning, Alter, Oppenheimer, Epley, & Eyre, 2007; Diemand-Yauman, Oppenheimer, & Vaughn, 2011; Song & Schwarz, 2008). At the same time, reduced certainty in the world and one's identity means that one's lens for meaning making is disrupted, thus affecting how experiences are interpreted (metacognition). We propose a bidirectional process in which people use their identities as meaning-making

lenses or mindsets that shape what the experience of ease or difficulty seems to mean (metacognition). At the same time, people use their accessible interpretations of meta-cognitive experiences to infer what their identities imply for action and meaning making. Just as thinking is pragmatic, situated, and experience-based, so is thinking about the self. Thinking is for doing; how people think about themselves serves to orient them to possibilities for action that make sense in context.
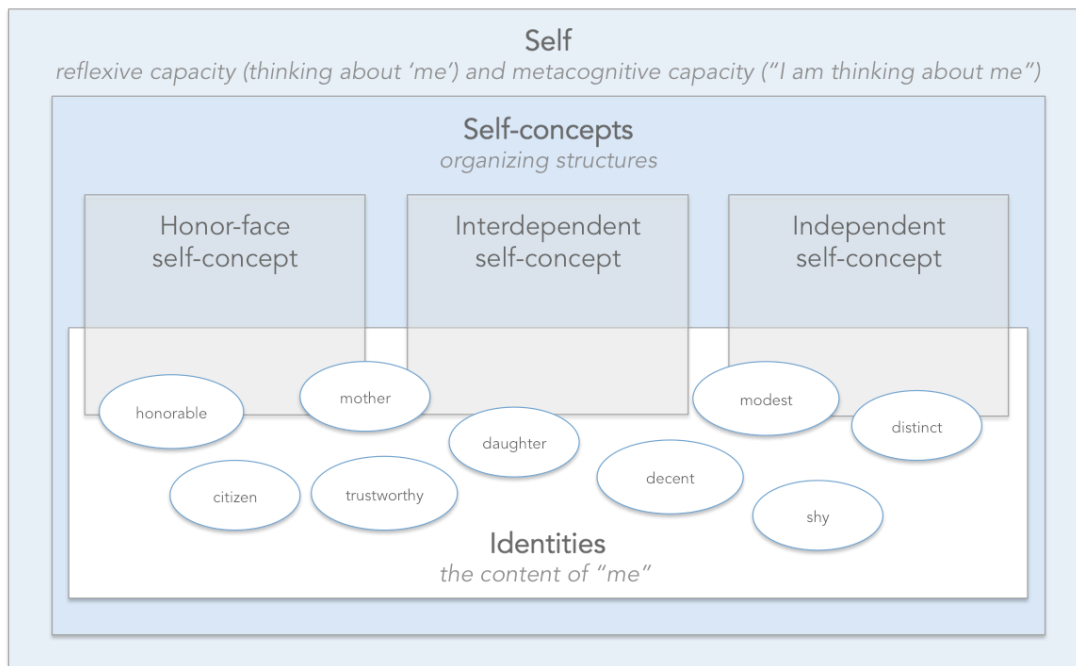
Identity-based Motivation

Figure 1. Identity is experienced as stable, but we have multiple self-concepts (and hence, modes of processing) and multiple identities available to us.

To understand how this process works, we start with identity-based motivation theory (IBM; Oyserman, 2009a; 2009b; 2015), which formalizes a description of the interplay between culture, identity and metacognition—how experienced ease and difficulty while thinking is interpreted. Identity-based motivation theory is a social psychological theory of motivation and goal pursuit that explains when and in which situations people's identities motivate them to take action toward their goals (Oyserman, 2007; 2009a; 2009b). As visually represented in Figure 1, we follow Oyserman, Elmore, and Smith (2012) in defining self, self-concept, and identity as

nested constructs as articulated next. At the highest level is the self, which we operationalize as a reflexive capacity (i.e., as the experience of both reflecting on oneself as an object, 'me'), and the metacognitive capacity to notice and reflect on this thinking ("I am thinking about 'me'"). There are different ways to organize this 'me' – different ways of construing the self, including individualistic (independent), collectivistic (interdependent) and honor (face) self-concepts. The grey boxes in Figure 1 show these organizing frames.

A particular self-concept may be chronically accessible in a given culture, but other self-concepts may also be available and cued by features of the immediate situation (see the literature on situated social cognition, e.g., Higgins, 1989; Smith & Semin, 2004; Srull & Wyer, 1979). Each of these self-concepts provides an organizing frame and highlights some features of the person one was, is, and might be – these past, current, and future identities include content and readiness to act and to understand the world through the lens of this content.

These identities include social roles, relationships, and memberships in groups and the traits and characteristics linked to these roles, relationships, and memberships. Identities are represented in Figure 1 with a series of white circles as examples. What an identity comes to mean is colored, in part, by the particular organizing self-concept that comes to mind in considering it. This dynamic construction of identity in the context of a self-concept is shown in Figure 2. The example in Figure 2 starts with honor-face self-concept coming to mind as an organizing frame and bringing to mind a subset of identities. One of these identities is 'being a mother'. This same identity might mean different things when the organizing framework is collectivistic versus when it is honor-face. In the former case, an interdependent self-concept likely highlights being a mother as a way of fitting in to and belonging within a family. In the latter case, an honor-face self-concept likely highlights requirements of being a mother in terms of modesty, trustworthiness and upholding family honor. These are not necessarily conflicting or competing, just different prisms through which the same identities can be understood. Throughout this paper, we use the term "identity" to refer to the traits and characteristics, social relationships, roles, and group memberships that define who a person was, is or might become, the combination of which defines their sense of self (Oyserman et al., 2012).

Identity-based motivation theory starts with the assumption that people prefer to act and make sense of situations in identity-congruent ways – ways consistent with what people 'like

me' do (Oyserman, 2009a; 2009b). That is, identity-based motivation theory highlights identity as involving a *readiness* component including action-readiness and procedural-readiness, readiness to act in ways that are congruent with beliefs about group membership and readiness to make sense of the world using relevant cognitive procedures. Action-readiness involves self-controlling, self-regulating behaviors and embodied stances -- how one stands, moves, dresses, and talks. Procedural-readiness involves sense making about the social and non-social world, with social and personal identities differing in whether an individual or collective mindset is cued and so whether separating or connecting procedures are activated. At the same time, however, which identities come to mind and what these identities imply for action and meaning making is not fixed but depends on features of the immediate situation. In other words, our identities and the content of those identities are *dynamically constructed* in context. The thing of interest, here, is not that people can change how they regard themselves after putting in sustained and conscious effort, but rather that small shifts in context can have surprisingly large effects by changing how people regard themselves. The three components of identity-based motivation (dynamic construction of identity, readiness to act, and meaning making in identity-congruent ways) operate in tandem. Hence, cues to action often influence both action and identity and cues to meaning-making often influence both understanding and identity.
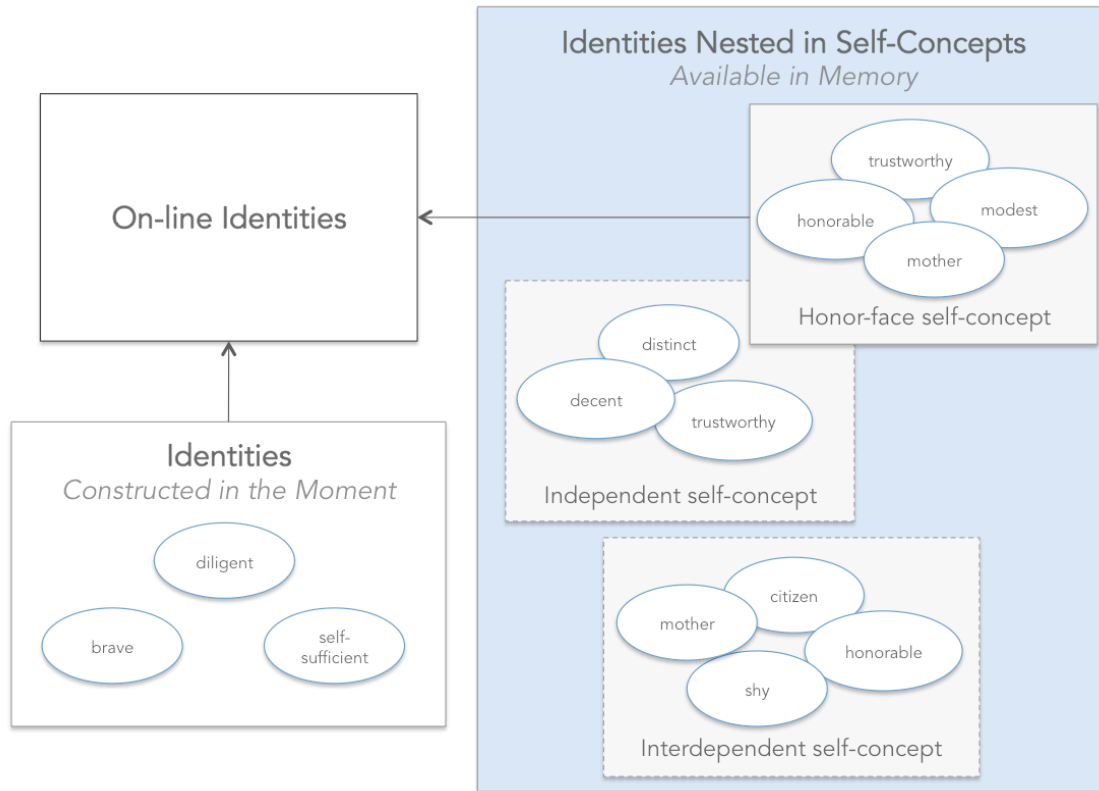
Figure 2. On-line identities include the subset of all identities available in memory that are accessible in the moment and identities that are dynamically constructed in the moment from contextual cues.

This ability to see oneself differently depending on contextual cues is called **dynamic construction** and is central to the theory of identity-based motivation (IBM). Dynamic construction goes beyond the idea that contexts increase the accessibility of particular identities bringing them into working memory. While important, the difference between accessibility (in working memory) and availability (in memory though not on-line) is not enough because it does not underscore that identities are not simply cued from memory, but also created in the moment. Figure 2 shows identities constructed in the moment separate from identities made accessible from available memory stores. As shown in Figure 2, in a particular setting, an honor mindset might be cued but that does not simply result in a fixed set of identities coming to mind. Instead, features of the situation in combination with honor mindset dynamically construct a sense of herself as a brave, diligent and self-sufficient mother. These may feel like the right way to be an honorable, modest and trustworthy mother in the moment. Features of the situation create this

particular formulation of the 'mother' identity, without requiring this set of features to have been previously linked to an honor framing of what being a mother means.

The tendencies to act and understand the world in ways that fit identities are called **action-readiness** and **procedural-readiness**. Each of these elements is summarized in Table 1. The basic idea underlying dynamic construction is that although people experience their identities as stable, which identities come to mind, and what these identities imply for behavior, is in fact situationally dependent. The major implication of this principle is that people not only see themselves differently depending on context, but as we will detail later, these small changes in context affect what people do.

Table 1

Identity-based Motivation Theory
Identity-based motivation theory is a theory of human motivation and goal pursuit, which explains when and in which situations people's identities or self-concepts will motivate them to take action towards their goals. Identity-based motivation can be described in terms of three connected elements: dynamic construction, action-readiness, and procedural-readiness.
Dynamic Construction
Though people experience themselves as having stable identities, which identities come to mind and what they imply for action and meaning making is dynamically constructed in context – how people think about themselves depends on situational affordances and constraints, this includes both which identities come to mind and what these identities seem to imply for action and meaning making.
Action Readiness
People prefer to act in ways that fit (are congruent) their identities. Because the identity to action link is bidirectional, situational affordances and constraints influence what people do and what they do influences how they see themselves.
Procedural Readiness
People prefer to make sense of their experiences with the lens of the identities that are currently on their mind. When an accessible identity feels certain and congruent to the task at

hand (it is a 'me' thing to do), people are more likely to interpret their experiences of ease as implying possibility and their experiences of difficulty as implying importance of engaging in identity-relevant tasks. In this way, identity certainty can increase persistent engagement. When a task feels identity-incongruent, 'not me', then people are more likely to interpret their experiences of ease as implying triviality and their experiences of difficulty as implying impossibility. The same is true when people feel uncertain about an accessible identity—they are more likely to interpret experienced ease as implying triviality and experienced difficulty as implying impossibility of succeeding, even in what would otherwise be identity-relevant tasks. In this way, identity uncertainty cues people to shift their focus to something else, quitting rather than sticking the course.

Procedural readiness is influenced by the organizing frame (self-concept) that is accessible at the moment – thus, when a collectivistic self-concept is accessible, people are more likely to organize experiences in terms of connections and gestalt wholes. When an individualistic self-concept is accessible, people are more likely to organize experiences in terms a single main point or separate elements. When an honor-face self-concept is accessible, people are more likely to organize experiences by ranking and creating a hierarchy.

The Components of Identity-based Motivation Work in Tandem

The components of identity-based motivation – dynamic construction, action readiness, and procedural readiness – work in tandem. Situational cues influence the 'me' that comes to mind (e.g., one's identity as a woman) and what that identity means in context. (e.g., does the *woman* cue a stereotype of being bad at math, does it cue the concept of female empowerment?). In turn, the identity content carries with it an action readiness—we are compelled to do things that feel like a 'me' or 'us' thing to do. In a similar way, accessible identities carry with them a procedural readiness, an interpretation of our experiences. If, in the moment, a task or behavior feels like a 'me' or 'us' thing to do, then ease implies possibility and difficulty implies importance; but if a task or behavior does not feel like a 'me' or 'us' thing to do, the ease implies triviality and difficulty implies impossibility. Similarly, there is a path in the opposite direction, from a particular interpretation of experience (procedural readiness) to dynamic construction of identity content and action readiness: If, in the moment, "no pain, no gain; difficulty signals importance" comes to mind, then whatever I am doing will feel more of a 'me' or 'us' thing to do; If, in the moment, I think "cut your losses; if something is difficult, it

is likely impossible," then I will begin to think that a task or behavior is not for 'me' or 'us'.

Action readiness is the readiness to act in identity-consistent ways. Since identities are both personal 'I' and social 'we', what is considered consistent may involve consistency with the ways 'I' act as well as consistent with what 'we' (my in-group) seem to be doing. Bidirectionality would imply that it feels right to act as 'I' or 'we' act and once 'I' am doing something, it feels like a 'me' or 'we' thing to do. **Procedural readiness** is the readiness to make sense of situations using the lens of identity – 'my' or 'our' (my in-group's) way of thinking. That is, it feels right to see the world as 'I' and 'we' see the world. Bidirectionality would imply that seeing things in a certain way increases likelihood that relevant identities will come to mind. Because of this link between identity and procedural readiness, in ambiguous situations when a social identity such as 'friend', 'dieter', or 'mother' is cued, people use that identity to understand why something might feel easy or difficult to do. Is dieting difficult? If in your community, mothers are heavyweight, then difficulty controlling one's appetite is more likely to mean that the odds of losing weight are low—it is impossible for you—and that your identity as a mother (who just is heavy) will come to mind. But if in your community, mothers on average have lost their pregnancy weight, then this same difficulty is more likely to remind you of the value of losing weight —it is important for you, and central to the identity of 'mother' to be working on weight loss.

The three components of identity-based motivation theory—dynamic construction, action-readiness, and procedural-readiness—operate in tandem: activating one process activates the others. For example, getting people to act in the moment can produce effects over time, if the action they took is then understood as identity-relevant. Small nudges, like putting the salad first in a buffet, can change action, with people more likely to take the salad when it comes first (Thaler & Sunstein, 2008). Nudges change behavior in the moment; people take more of something if it shows up early in the buffet. Without an identity link, the nudge only matters when it occurs. With the identity link, the behavior should be more likely to sustain. Once one notices having taken and consumed the salad, one may come to see oneself as a 'healthy eater'. The same bidirectional process occurs for interpretation of experienced difficulty. Once one notices having taken and consumed the salad, one should be more likely to interpret experienced difficulty making future healthy choices as a "no pain, no gain" sort of thing. That is, a 'healthy

eater' identity implies that the way to understand experienced difficulty in sustaining healthy choices is that the identity is important to oneself: one needs to persist. Conversely, if the salad was not chosen or if the behavior-to-identity link was not made, then difficulty in making future choices is likely to be interpreted as meaning that a 'health eater' identity is not one that the person has or is likely to have in the future (Oyserman & Fisher, in press; Lewis & Oyserman, in press).

As the above examples imply, what difficulty means depends on how it is interpreted. Considering effects of identity and culture on metacognition focuses attention on the lay theories people use to make sense of their experiences of ease and difficulty. What does it mean for one's identity when something feels easy (fluent) or difficult (disfluent)? What experienced metacognitive ease and difficulty implies depends on accessible lay theory, it may signal importance (high value) or impossibility (low odds) (Fisher & Oyserman, 2017; Oyserman, Novin, Elmore, & Smith, 2017). Processing ease, which ensues when observations about the world and one's immediate situation match culturally rooted expectations, can imply that all is fine (Mourey, Lam, & Oyserman, 2015). This signal implies no need for suspicion or uncertainty and hence, no need to shift to systematic reasoning. In contrast, processing difficulty, which ensues when culturally rooted expectations are not a match with observations about the world and one's immediate situation serves as a problem signal and as a result, a cue to shift to systematic reasoning (Mourey et al., 2015). Because systematic reasoning is a response to a problem signal, it may undermine certainty in one's self-knowledge.

In the next parts of this chapter, we first highlight the role of culture and the downstream consequences of violations of cultural expectation on metacognition and identity. Second, we consider the bidirectional relationships between metacognition and identity. Lastly, we formalize a process model describing this culture-identity-metacognition interface and make suggestions for how this interface may offer new ways of thinking about old questions. In doing so, we highlight how a synthesized consideration of culture, identity, and metacognition moves forward understanding. To concretize our reasoning, throughout we focus on the context of learning.

Culture as Expectations

Culture can be thought of as a set of everyday practices, a core theme—individualism, collectivism, or honor-face, and the capacity to understand each of these core themes in context

(Oyserman, 2011, 2017). In one's own culture, it is easy to fail to see that a cultural lens exists. As a consequence, studying culture, or even noticing it, requires stepping out of it by contrasting groups or by testing the consequences of disruption to implicit cultural frames. Our experiences of ease (fluency) and difficulty (disfluency) are thus at least in part culturally constituted. Cultural expectations shield reflexive processing by making everyday life feel predictable. People know what to expect as situations unfold and as long as observations meet expectations, they do not need to shift up from associative reflexive thinking to time-consuming and effortful systematic reflective reasoning.

When saying that culture is a set of everyday practices and a set of core themes, we imply that culture can be considered expertise in the form of (often implicit) if-then propositions. Imagine attending a wedding. The bride is walking down the aisle wearing a beautiful wedding gown. What color is that dress? If you are in a modern, industrialized country, then you likely imagined a white dress, without even thinking about it. So, 'if wedding, then white dress' just seems obvious. This experience of a white dress is viewed as normal, natural, and fluent. In fact, people may not even recognize that white is a cultural practice.[1] It is easy to take cultural practices for granted as if they are the only way for things to unfold and not notice that a prediction was being made or confirmed. However, when events unfold in unexpected ways, this mismatch between expectations and observations yields an experience of disfluency. In the case of the imagined wedding, what if the bride emerges in a beautiful green wedding gown? In context, one still knows with certainty that this person is the bride; color does not create a problem signal for inferring who the bride is. But it is not as implicitly expected—it is disfluent—and as we will show, this disfluency does matter.

Consequences of Cultural [Dis]fluency for Cognition. Cultural disfluency has an important downstream consequence; it carries over to affect how people process information irrelevant to the immediate source of disfluency. Cultural disfluency signals the need to reason more systematically as shown in a series of experiments by Mourey et al. (2015). Mourey and colleagues manipulated the experience of cultural disfluency in three different ways. In two

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[1] But far from being the obvious, natural, or only choice, white only became the popular color of choice for wedding dresses in the Western world after Queen Victoria's official wedding portrait was widely published in 1840 (Begley, 2015). White as a wedding dress color of choice across

experiments, participants were shown images of a wedding in which the wedding dress was either green (culturally disfluent) or white (culturally fluent). In a third experiment, participants read an irreverent obituary in which the mourners were happy that the deceased was gone (culturally disfluent) or a solemn obituary in which the mourners were saddened that the deceased was no longer alive (culturally fluent). In a fourth experiment, participants read questions surrounded by a black or white border (culturally neutral) or a pink border (culturally fluent, when the study was held on Valentine's day, but culturally neutral a week later). In each of these experiments, the dependent variable was an adapted version of the Cognitive Reflection Test[2] (CRT; Frederick, 2005). Across experiments the results were consistent: Participants in the culturally fluent condition were more likely to use associative reasoning and respond with intuitive but incorrect responses to the CRT. In contrast, participants in the culturally disfluent condition were more likely to use systematic reasoning and provide correct CRT responses.

In four other experiments, Mourey and colleagues showed that this shift to more systematic reasoning has additional downstream consequences for judgments. The cultural fluency manipulations were the wedding dress and funeral obituary manipulation described above, as well as two experiments in which plate decorations were manipulated to be culturally fluent or not (in the U.S. at 4th of July or Labor Day picnics, and in Hong Kong on Chinese New Year). In these experiments, the dependent variable was willingness to purchase an unrelated object (a shovel in the Wedding experiment and a keychain charger in the Funeral experiment) or willingness to put food on one's plate (the Picnic and Chinese New Year experiments). Across experiments, people in the culturally fluent condition were more willing to acquire. It was as if they responded to the question 'Do you want this?' with a reflexive, 'Sure!'. Their response contrasted to that of the participants in the culturally disfluent condition, who seemed to be responding to the question 'Do you want this?' with a more reflective, 'Why would I?', since the

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[2] In the CRT used in these experiments, participants answered three questions. In each case, the 'gut response' answer was incorrect; applying a simple rule was needed. The CRT is designed to test participants' sensitivity to the possibility that it was necessary to engage in more systematic or reflective reasoning to generate the correct answer. An example of a classic CRT question is: *A ball and a bat together cost $1.10. The bat costs $1 more than the ball. How much does the ball cost?* Participants' gut response tends to be $0.10; the rule-based correct answer, however, is $0.05. The gut here is $1.10 is a dollar more so, $1.10-$1.00=$0.10; the rule here is $1.00 + 2x= $1.10, x=$0.05. Hence, the bat costs $1.05 and the correct answer for the cost of the ball is $0.05.

objects were actually irrelevant to the situation and since more food is not necessarily better for oneself. These effects were not mediated by changes in mood. Moreover, though the culturally disfluent conditions were rated as less traditional, traditionality ratings did not mediate the effects, implying that effects are not simply a reaction to a threat or surprise.

Another very basic consequence of cultural fluency and disfluency is its effect on people's sense of inherence. Inherence is the belief that current features are necessary to or inherent in an object – for example, given that U.S. dollars are green, Americans high in inherence believe that money 'should' be green (Salomon & Cimpian, 2014). Inherence is considered a form of essentialism, which is the belief that categories members share deep similarities that are fixed even if there are surface differences (Gelman, 2003). For example, dogs look different but share a 'dog essence' that makes them different from cats or that even though dogs generally have four legs; a three-legged dog is still a dog. Essentialism is cognitively useful and helps people develop and utilize category knowledge but also has downsides because essentialist thinking is related to acceptance of inequalities (Morton, Postmes, Haslam, & Horney, 2009) and increased endorsement of stereotypes and entity theories (Bastian & Haslam, 2006). In a series of experiments, Lin and Oyserman (2016) manipulated cultural fluency in using a similar paradigm to Mourey and colleagues. For example, participants were shown Valentine's Day cards with culturally fluent heart shapes or culturally disfluent heart shapes made of skulls. Those in the disfluent condition scored lower on a measure of inherence beliefs. For example, they were less likely to agree that it is natural to use red in a traffic light to mean stop or that it is ideal that there are seven days in a week.

Consequences of Cultural [Dis]fluency for Identity. Identities carry with them implications for what it means to be that person, what is important, and what is possible. To the extent that violations of expectations reduce essentialist beliefs and increase systematic reasoning, these violations may even signal uncertainty about one's identity. Just as it can be detrimental to rely on heuristic processing and to over-categorize (e.g., the problems with stereotyping), it can also be detrimental to under-categorize. When violations signal a problem— *the world is not as I know it*—and shifts individuals into a systematic processing mode, this mode might carry with it questions about identity—*perhaps I am not as I know myself either*. The benefits that come along with identity—action readiness and procedural readiness—disappear when identity certainty is undermined. These loses can undermine motivation and engagement.

In other words, there is both a potential upside (systematic reasoning) and a likely downside (identity uncertainty; too little essentialism) to cultural disfluency.

One way in which the effect of disrupted cultural expectations on identity has been studied is in the context of culture shock. We propose that culture shock represents an extreme version of cultural disfluency. Culture provides meaning; culture shock refers to the set of experiences that often occur in response to people finding themselves immersed in an unfamiliar cultural environment, where one no longer knows what is going on (Oberg, 1960). Culture shock produces anxiety and depression (Furukawa, 1997; Kilinc & Granello, 2003); culture shock researchers have long argued that one of the characteristics of culture shock is confusion in role, role expectations, values, feelings, and self-identity (Taft, 1977; Mumford, 1998). We argue that uncertainty in identity may in fact be a central and underlying process that gives rise to other symptoms (e.g., feeling helpless, wishing to escape) [3]. Moreover, this identity-based process is not unique to migrants, but even much subtler contextual cues can lead to the experience of cultural disfluency and destabilize certainty in one's identity. The identity-based motivation framework in fact provides an explicit bridge between culture and identity processes by highlighting how people's lay theories influence their response to experiences of difficulty (of which migration is one example of many).

Identity and Metacognition

Two things happen when cultural expectations are violated: (1) people's sense of identity, inherence beliefs, and confidence in predicting and acting on the world around them is reduced, and (2) they experience disfluency or difficulty. Each of these experiences of (dis)fluency and (un)certainty, need to be interpreted—that is what metacognition involves. People do not directly observe reality, but rather they view it through culture- and identity-based lenses. When nothing is certain, not even one's identity, experienced difficulty may feel insurmountable. For example, if one is uncertain that they have a particular identity, that they are or could become 'a good student', then experiencing difficulty while studying or working on an academic task should undermine their belief that they can do it. Conversely, if they are certain that they have or could

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[3] There are, of course, many other consequences to culture shock that go beyond the scope of our chapter and many consequences that may be related to the specific reasons behind moving to a new culture (e.g., seeking refuge vs. studying abroad).

attain this 'good student' identity, then difficulty in schoolwork should be experienced via a different lay theory of what difficulty might imply, a difficulty-as-importance lay theory. If difficulty is experienced as impossibility, the effect on behavior is negative and people become demotivated and disengaged (Smith & Oyserman, 2015). If the difficulty is experienced as importance, the effect on behavior is positive and people become motivated and engaged (Aelenei, Lewis, & Oyserman, 2016; Elmore & Oyserman, 2012). We find parallel effects to what would be expected from culture shock prediction in ongoing work on the association between endorsement of lay theories about what experienced difficulty means and well-being in adults (Elmore, Nurra, & Oyserman, 2017).

People assume that they know who they are and experience their identities as stable over time (Oyserman, Elmore, & Smith, 2012) and people report feeling that their identities are certain rather than open to question (Baumgardner, 1990; Lecky, 1945). This subjective experience of stability and certainty allows accessible identities to provide a useful lens through which people interpret their ongoing experiences and has implications for cognition and action (Oyserman et al., 2012). When people engage in a task, they use their interpretation of their metacognitive experience (whether it feels easy or difficult). An important question interpretation of metacognitive experience addresses, one that determines whether or not one continues pursuing a task is: "Is this for me – a 'me' or 'us' thing to do?" The 'me' or 'we' identity that comes to mind and its fit with the task one is engaged in become critically important for how people interpret their experiences, their cognitions, and their actions. Put another way, when identity is experienced as fluent and stable, it serves as a lens for interpreting experiences of ease and difficulty.

When difficulty is experienced, whether from a task or cultural disfluency generally, the questions that may come to mind are: "Is this task or goal important for 'me' or 'us'?" and "Is this task or goal impossible and not for 'me' or 'us'?" When ease is experienced, the questions that may come to mind are: "Is this task or goal trivial for 'me' or 'us'?" and "Is this task or goal possible for 'me' or 'us'?" These interpretations of ease and difficulty have different implications for motivation and subsequent engagement. For example, interpreting difficulty as importance and ease as possibility may be motivating: these interpretations predict that individuals will continue to persist in a task (Fisher & Oyserman, 2017). If however, difficulty is

taken to be a sign of impossibility and ease is taken to be a sign of triviality, then the consequence may be one of de-motivation and disengagement (Fisher & Oyserman, 2017).

Identity and culture frame metacognition. The identity that comes to mind has consequences for how difficulty is interpreted and hence subsequent cognition and engagement. One of the central features of identity-based motivation theory is the assumption that people prefer to act and make sense of situations in identity-congruent ways that 'people like me' do. If a task or situation feels identity-congruent, then difficulty signals importance and ease signals possibility; but if a task or situation feels identity-incongruent, then difficulty signals that the odds of success are low and ease signals triviality. For example, when a female student experiences difficulty in a mathematics class, how this difficulty is interpreted depends on the identity that comes to mind. If her *female* identity comes to mind and it brings along with it the stereotype that women are not as good at mathematics, then experienced difficulty is likely to be interpreted as a sign that this class is 'not for me', and that the odds of succeeding are low, leading to disengagement. If, however, the female identity that comes to mind brings with it the centrality of academics (e.g., *I am someone who wants to do well in school to secure a good future*) or another task-congruent identity (e.g., *I am a good student*), then experienced difficulty is likely to be interpreted as a sign that working hard and persisting in this math class is important; that persisting in this task is what 'people like me' do. The reverse should hold for boys. Thinking of oneself as a boy in situations in which girls succeed at school should undermine academic engagement, while thinking of oneself as a boy in situations in which males succeed at work should bolster academic engagement. Indeed, that is what Elmore and Oyserman (2012) found when they guided boys and girls to consider their gender identities either in situations in which 'we' succeed (for girls, after seeing graphs depicting women's superior high school graduation rates and for boys, after seeing graphs depicting men's superior earnings). In this way, the experimenters shifted the identity content of each gender, implying that either girls or boys were the more school-focused gender. When the graph showed success linked to one's own gender rather than to the other gender, children described more school-related possible selves, more strategies to work on the generated possible selves, were more engaged and attained more correct solutions on a math task, and could more easily imagine themselves going farther in school and earning more money. This effect was not limited to just one gender, demonstrating that it is not just the dynamically constructed identity that comes to

mind that is important, but also the content of that identity which in itself is dynamically constructed.

A parallel motivating and demotivating process is likely when faced with a metacognitive experience of ease. If the experience is one of ease, then the female student with the academic identity comes to mind is likely to interpret that experience of ease as possibility, and continue on; the female student who believes the mathematics is incongruent with her identity may take that ease to be a signal of triviality and focus attention elsewhere. In this way, identity cues an interpretation of experienced ease and difficulty and provides us with a readiness to act (e.g., to persist or to disengage); the identity itself is dynamically constructed in context by features of the immediate situation.

Identities can be cued in various ways. An identity may be cued in relatively explicit ways by reminding people of a group membership (e.g., see the literature on experimental manipulations of stereotype threat and stereotype boost)—for example, reminding Asian females of their Asian identity (and hence, the stereotype that "Asians are good at math") improves performance on a math task, but reminding them of their female identity (and hence, the stereotype that "Women aren't good at math") lowers performance on math task (Gibson, Losee, & Vitiello, 2014; Shih, Pittinsky, & Ambady, 1999). But there are also more subtle ways in which identities can be cued, and the identities do not necessarily have to be heavily stereotyped ones. Framing time in days rather than years, for example, creates a sense of imminence and has the effect of making the future feel more connected and congruent to the present (Lewis & Oyserman, 2015). Thus, Lewis and Oyserman (2015) found that guiding people to consider future time in days compelled them to start saving for college or for retirement earlier than if they were guided to considered future time in years. They also found that this effect was mediated in part by closeness and experienced connection between current 'me' and future 'me' as a retired person. When one's future possible identities feel relevant to right now, people are more likely to get going on the tasks that are important to do, even when doing so is difficult. On the other hand, if one's future possible identities are not accessible or connected to right now, then experienced difficulties are more likely to be interpreted as impossibility.

Increasing the connection between current and future identities spurs action: when things get tough, the tough get going (Oyserman, Bybee, & Terry, 2006). The positive effects of connection between current and future identities have been documented in a number of

experiments. For example, in their series of experiments, Landau, Oyserman, Keefer, and Smith (2014) showed that college students could better imagine the link between current and future selves, were better able articulate strategies to reach their future identities and to overcome obstacles along the way, when they were guided to consider their college years from present to future along a path rather than as separated bins. Among other things, those in the path condition expressed greater interest in attending an academic workshop, put more effort into a math task and solved more problems correctly, planned to study more for an upcoming exam (and to socialize less), and performed better on that final course exam a week later.

Metacognition frames identity. An accessible interpretation of difficulty—whether a result of a chronic framework or guided by situational cues—can also influence what identities come to mind. In other words, the metacognition-identity link is bidirectional. Guiding students to interpret experienced difficulty with schoolwork as implying that schoolwork is important to them affects how central academic identities feel, the number of school-related possible selves students generate, certainty in attaining those possible selves, their willingness to sacrifice to attain academic goals (Aelenei et al., 2016; Oyserman, Destin, & Novin, 2015; Smith & Oyserman, 2015) and persistence and achievement on cognitive and school-related tasks (Oyserman et al., 2017; Smith & Oyserman, 2015).

For example, Aelenei et al. (2016) approached students on college campuses and asked them to complete a questionnaire. In a 2x2 between-subjects manipulation, students filled out either an interpretation of experienced difficulty as importance scale (e.g., "I know in my gut that if a school task feels difficulty, it is really important for me") or an interpretation of experienced difficulty as impossibility scale (e.g., "I know in my gut that if a school task feels difficulty, it is really not possible for me"). Exposing participants to either the importance or impossibility scale served to guide their interpretation of experienced difficulty, activating one interpretation over the other. These scales were presented either before or after the dependent variables—judged likelihood of attaining academic possible identities, willingness to sacrifice for academics, and academic and social motives for attending college. Being first guided to interpret experienced difficulty as a signal of importance led students to feel more certain about attaining their academic possible identities and increased willingness to sacrifice for one's academic goals.

Smith and Oyserman (2015) guided students to interpreting experienced difficulty as either signaling importance or impossibility by asking them to recall a time in which difficulty

engaging in school tasks was important or impossible, and led them to believe that they either had this experience more or less frequently than their peers. When students were led to think about experienced difficulty as signaling importance and that this experience was more typical for them than for others, they experienced academics as being more central to their identities and consequently, spent longer working on Raven's matrices puzzles.

Beyond laboratory experiences, these processes have a real impact on academic outcomes. For example, an identity-based motivation educational intervention, School-to-Jobs, leverages the bidirectional relationship between identity and metacognition (Oyserman, 2015; Oyserman, Terry, & Bybee, 2002). The intervention consists of 11 bi-weekly small group activities that evoke the ideas of identity-based motivation. In a randomized control trial, compared to a school-as-usual control condition, those who experienced the intervention showed substantial, significant and sustained improvements in grades, time spent on homework, attendance, and standardized test scores, and these effects were measured and found up to two years later. Follow-up research examined effects of differences in the fidelity with which the intervention was delivered. Students in classrooms in which teachers delivered the intervention with greater fidelity experienced greater benefits (Horowitz, Sorensen, Yoder, & Oyserman, 2017).

Taking the culture-identity-metacognition interface into account can, in our opinion, also improve take-up of educational interventions that mismatch cultural expectations. Consider the case of educational interventions designed to target misconceptions about learning. Correcting misconceptions involves telling people that what they believe is not true and rarely works. In Westernized cultures, a common misconception about learning is that learning should feel easy (Koriat, 2008). Indeed, the most popular study strategies—for example, re-reading or highlighting—are those that are relatively passive and yield a high sense of fluency (e.g., Karpicke, Butler, & Roediger, 2009). Students assume that if learning a topic does not feel easy, then it is not for them (difficulty-means-impossibility, not for me), or that the material itself is of insufficient value to them (ease-means-triviality, not for me). However, a large body of cognitive psychology research has demonstrated that study strategies that feel more difficult because they require deeper and more elaborative processing are more effective (e.g. Bjork, 1994; Yan, Clark, & Bjork, 2016). These difficulties are "desirable", but are not experienced as such. The common interpretation of experienced difficulty (difficulty-means-impossibility) not only decreases

enjoyment of a learning task, it can also steer learners away from using effective learning strategies. In light of their likely interpretation of experienced difficulty, when learning incorporates desirable difficulties, learners not only underappreciate the efficacy of their study, but may also de-value the learning tasks altogether (e.g, Baddeley & Longman, 1978).

Yan, Bjork, and Bjork (2016) had very limited success in correcting students' faulty beliefs that strategies that feel easier are more effective than strategies that feel difficult. In these studies, learners were exposed to an easier, but less effective strategy (study a category before moving on to something else – a blocking or massing strategy) and to a more difficult, but more effective strategy (intermixing studying in different categories). They learned material in both ways and got feedback on their subsequent performance. Across a series of studies, despite their own performance and despite being told that 90% of learners learn better using the mixed rather than the massed strategy, the majority of participants decided that they must be in the 10% minority for whom massing is better. Why might that be? Although the Yan and colleagues study was not designed to test for the cultural and identity underpinnings of their participants' interpretation of their experienced difficulty with the intermixing strategy, we can draw some inferences based on our process model. First, participants were likely to have cultural and identity-based beliefs about learning; in this case, the default was likely to focus on ease as implying possibility and difficulty as implying low odds. These interpretations of their metacognitive experience likely led them to conclude that when learning feels easier it is more effective and when it feels difficult, likelihood of success is low. Trying to change this belief into its opposite—when learning feels difficult, that learning method is of value to me—may have a destabilizing effect on one's identity as a capable learner. The results Yan and colleagues present suggest that participants preferred to reject the difficult strategy, rather than accept the idea that they may not be expert learners. These results imply that future interventions that first guide students to interpret difficulty as importance may improve adoption of effective, yet difficult learning strategies, if students also reframe their learner identities from 'I have expertise about how to learn' to 'learning requires challenge.'

The Culture-Identity-Metacognition Interface: A Summative Process Model
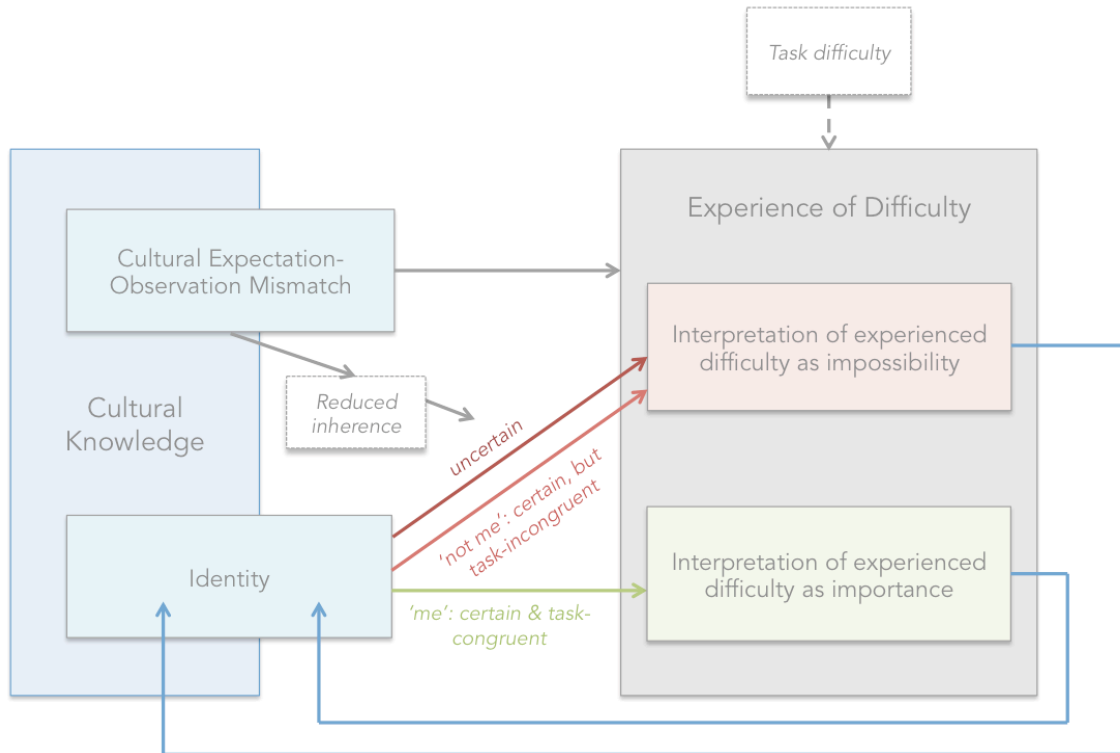
Figure 3. Process model of the culture-identity-metacognition interface.

In this chapter, we focused on the processes that underlie the relationships between culture, identity, and metacognition. These relationships are summarized and illustrated in Figure 3. As we articulated, cultural expertise yields a set of expectations about how situations will unfold, which may match or mismatch with observations. Cultural expertise also shapes identity content (the various '*me*' or 'us' identities that come to mind). When mismatches occur, experienced inherence declines and people experience difficulty. An experience could also arise from the nature of the tasks at hand. Experiences of difficulty need to be interpreted. As can be seen in Figure 3 as represented by the red and green boxes, experienced difficulty may be interpreted as either a signal of impossibility or of importance. When one's identity feels certain, whether the task at hand is congruent with that identity (the task is experienced as 'me' or 'not me') affects which interpretation of difficulty comes to mind. When the task is 'me' (green arrow), difficulty is likely to be interpreted as a signal of importance. When the task is 'not me' (lower red arrow), difficulty is likely to be interpreted as a signal of impossibility. When one's identity feels uncertain (and this uncertainty may be a consequence of a cultural expectation-

observation mismatch and reduced inherence), then difficulties may feel insurmountable, a signal of impossibility (the upper red arrow in Fig. 3). At the same time, the bidirectional identity-metacognition link means that an accessible interpretation of experienced ease or difficulty can also affect the identity that comes to one's mind, as represented by the blue arrows in Figure 3.

Culture provides a sense of fluency, knowing what one should expect. This knowledge eases our everyday life, gives us a sense of meaning and purpose, and a sense of ourselves. Unfortunately, this reliance on culture also means that when things do not happen as expected—either from minor disruptions to our cultural frames or from something more major, such as migrating to a new country—then people become vulnerable. The lack of fluency shifts people to a systematic reasoning process. This shift has both an upside and a downside. The upside is that a shift to systematic reasoning can improve one's ability to reason and perform well on difficult, cognitive tasks. On the other hand, the downside is that the experience of cultural disfluency decreases belief in inherence, which can generalize to uncertainty about the self, with debilitating consequences. We believe that the culture-identity-metacognition interface we have described in this chapter has important applied as well as theoretical implications.

References

Aelenei, C., Lewis, N. A., & Oyserman, D. (2016). No pain no gain? Social demographic

correlates and identity consequences of interpreting experienced difficulty as importance.

Contemporary Educational Psychology, http://dx.doi.org/10.1016/j.cedpsych.2016.08.004

Alter, A. L., Oppenheimer, D. M., Epley, N., & Eyre, R. N. (2007). Overcoming intuition:

metacognitive difficulty activates analytic reasoning. *Journal of Experimental Psychology:*

General, *136*(4), 569-576.

Bastian, B., & Haslam, N. (2006). Psychological essentialism and stereotype endorsement.

Journal of Experimental Social Psychology, *42*(2), 228-235.

Baumgardner, A. H. (1990). To know oneself is to like oneself: self-certainty and self-

affect. *Journal of Personality and Social Psychology*, *58*(6), 1062-1072.

Begley, S. (2015, February 10th). The white dress that changed wedding history forever.

Retrieved from http://time.com/3698249/white-weddings/

Bjork, R. A. (1994). Memory and metamemory considerations in the training of human beings.

In J. Metcalfe and A. Shimamura (Eds.), Metacognition: Knowing about knowing (pp.185-

205). Cambridge, MA: MIT Press.

Chaiken, S., & Trope, Y. (Eds.). (1999). *Dual-process theories in social psychology*. Guilford

Press.

Cimpian, A., & Salomon, E. (2014). The inherence heuristic: An intuitive means of making

sense of the world, and a potential precursor to psychological essentialism. *Behavioral and*

Brain Sciences, *37*(05), 461-480.

Diemand-Yauman, C., Oppenheimer, D. M., & Vaughan, E. B. (2011). Fortune favors the bold

(and the italicized): Effects of disfluency on educational outcomes. *Cognition, 118*(1), 111-

115.

Elmore, K. & Oyserman, D. (2012). If 'we' succeed, 'I' can too: Identity based motivation and gender in the classroom. *Contemporary Educational Psychology, 37,* 176-185.

Elmore, K., Nurra, C., & Oyserman, D. (2017). Motivation as character trait: Relationships among motivational lay theories and self-judgments related to work and well-being. Manuscript under Editorial Review.

Fisher, O. & Oyserman, D. (2017). Assessing interpretations of experienced ease and difficulty as motivational constructs. Revise and Resubmit *Motivational Science*.

Frederick, S. (2005). Cognitive reflection and decision making. *The Journal of Economic Perspectives*, *19*, 25-42.

Furukawa, T. (1997). Sojourner readjustment: Mental health of international students after one year's foreign sojourn and its psychosocial correlates. *The Journal of Nervous and Mental Disease*, *185*, 263-268.

Gelman, S. A. (2003). *The Essential Child: Origins Of Essentialism In Everyday Thought*. Oxford University Press, USA.

Gibson, C. E., Losee, J., & Vitiello, C. (2014). A replication attempt of stereotype susceptibility (Shih, Pittinsky, & Ambady, 1999). *Social Psychology, 45*, 194-198.

Higgins, E. T. (1989). Self-discrepancy theory: What patterns of self-beliefs cause people to suffer?. *Advances in Experimental Social Psychology*, *22*, 93-136.

Horowitz, E., Sorensen, N., Yoder, N., & Oyserman, D. (2017) Creating a Pathway to Success: Teachers Can Change their Students' Identity-Based Motivation. Manuscript Under Editorial Review.

Kahneman, D. (2003). Maps of bounded rationality: Psychology for behavioral economics. *The American economic review*, *93*(5), 1449-1475.

Karpicke, J. D., Butler, A. C., & Roediger, H. L., 3rd. (2009). Metacognitive strategies in student learning: do students practice retrieval when they study on their own? *Memory, 17*, 471–479.

Kilinc, A., & Granello, P. F. (2003). Overall life satisfaction and help-seeking attitudes of Turkish college students in the United States: Implications for college counselors. *Journal of College Counseling*, *6*(1), 56-68.

Koriat, A. (2008). Easy comes, easy goes? The link between learning and remembering and its exploitation in metacognition. *Memory & Cognition*, *36*(2), 416-428.

Landau, M., Oyserman, D., Keefer, L., & Smith, G. C. (2014) The college journey and academic engagement: how metaphor use enhances identity-based motivation. *Journal of Personality and Social Psychology, 106,* 679-698.

Lecky, P. (1945). Self-consistency; a theory of personality. Island Press: Washington, DC.

Lewis, N. A. & Oyserman, D. (2015). When does the future begin? Time metrics matter, connecting present and future selves. *Psychological Science, 26*(6), 816-825. doi: 10.1177/0956797615572231

Lewis, N. A. & Oyserman, D. (in press). Using identity-based motivation to reduce health gaps and disparities. *Behavioral Science & Policy.*

Lin, Y. & Oyserman, D. (2016, July). When all is right with the world: Cultural fluency influences endorsement of the inherence heuristic (poster). *International Congress of Psychology,* Yokohama, Japan.

Morton, T.A., Postmes, T., Haslam, S.A., & Hornsey, M.J. (2009). Theorizing gender in the face of social change: Is there anything essential about essentialism? *Journal of Personality and Social Psychology, 96,* 653-664.

Mourey, J., Lam, B., & Oyserman, D. (2015) Consequences of cultural fluency. *Social Cognition, 33*(4)*, 308-344. doi: 10.1521/soco.2015.33.4.308.*

Mumford, D. B. (1998). The measurement of culture shock. *Social Psychiatry and Psychiatric Epidemiology*, *33*(4), 149-154.

Oberg, K. (1960). Cultural Shock: Adjustment to New Cultural Environments. *Practical Anthropology, 7,* 177-182.

Oyserman, D. (2007) Social identity and self-regulation. In A. Kruglanski & T. Higgins (Eds.) *Handbook of Social Psychology*, Second Edition. (pp. 432-453). NY: Guilford Press.

Oyserman, D. (2009a). Identity-based motivation: Implications for action-readiness, procedural readiness, and consumer behavior. Target Article. *Journal of Consumer Psychology. 19*, 250–260.

Oyserman, D. (2009b). Identity-based motivation and consumer behavior, *Journal of Consumer Psychology*, *19*, 276-279.

Oyserman, D. (2011). Culture as situated cognition: Cultural mindsets, cultural fluency and meaning making. *European Review of Social Psychology, 22*, 164 214.

Oyserman, D. (2015). *Pathways to success through identity-based motivation*. New York, NY: Oxford University Press.

Oyserman, D. (2017). Culture three ways: culture and subcultures within countries. *Annual Review of Psychology, 68,* 15.1–15.29. DOI *10.1146/annurev-psych-122414-033617*

Oyserman, D., Bybee, D. & Terry, K. (2006). Possible selves and academic outcomes: How and when possible selves impel action. *Journal of Personality and Social Psychology, 91*, 188-204.

Oyserman, D., Destin, M., & Novin, S. (2015). The context sensitive future self: Possible selves motivate in context, not otherwise. *Self and Identity, 14*, 173-188.

Oyserman, D., Elmore, K., & Smith, G. (2012). Self, self concept and identity. In M. Leary & J. Tangney (Eds). *Handbook of Self and Identity, 2nd Edition* (pp. 69-104). New York, NY: Guilford Press.

Oyserman, D. & Fisher, O. (in press). Identity-based motivation and health: An identity-based motivation and social stigma approach. In B. Major, J. F. Dovidio, and B. G. Link. *The Oxford Handbook of Discrimination, Stigma and Health*, NY: Oxford University Press.

Oyserman, D., Novin, S., Elmore, K., Smith, G. C., (2017). How experienced difficulty is interpreted matters, shaping identity, motivation and performance. Manuscript Under Editorial Review.

Oyserman, D., Terry, K., & Bybee, D. (2002). A possible selves intervention to enhance school involvement. Journal of Adolescence, 24, 313–326. doi:10.1006/jado.2002.0474

Salomon, E., & Cimpian, A. (2014). The inherence heuristic as a source of essentialist thought. *Personality and Social Psychology Bulletin*, *40*, 1297-1315.

Shih, M., Pittinsky, T. L., & Ambady, N. (1999). Stereotype susceptibility: Identity salience and shifts in quantitative performance. *Psychological Science, 10*(1), 80-83.

Smith, E. R., & Semin, G. R. (2004). Socially situated cognition: Cognition in its social context. *Advances in Experimental Social Psychology*, *36*, 53-117.

Smith, G. C. & Oyserman, D. (2015) Just not worth my time? Experienced difficulty and time investment. *Social Cognition, 33,* 85-103.

Song, H., & Schwarz, N. (2008). Fluency and the detection of misleading questions: Low processing fluency attenuates the Moses illusion. *Social Cognition*, *26*(6), 791-799.

Srull, T. K., & Wyer, R. S. (1979). The role of category accessibility in the interpretation of information about persons: Some determinants and implications. *Journal of Personality and Social psychology, 37*(10), 1660-1672.

Stanovich, K. E., & West, R. F. (2000). Advancing the rationality debate. *Behavioral and Brain Sciences*, *23*(05), 701-717.

Taft, R. (1977). Coping with unfamiliar cultures. In N. Warren (Ed.). *Studies of Psychiatric Research* (pp 1-17). Wiley: Chicester.

Thaler R, & Sunstein C. (2008). *Nudge: Improving Decisions About Health, Wealth, and Happiness*. Yale University Press

Yan, V. X., Bjork, E. L., & Bjork, R. A. (2016). On the difficulty of mending metacognitive illusions: *A priori* theories, fluency effects, and misattributions of the interleaving benefit. *Journal of Experimental Psychology: General. 145,* 918-933.

Yan, V. X., Clark, C. M., & Bjork, R. A. (2016). Memory and metamemory considerations in the instruction of human beings revisited: Implications for optimizing online learning. J. C. Horvath, J. Lodge, & J. A. C. Hattie (Eds). *From the Laboratory to the Classroom: Translating the Learning Sciences for Teachers*. Routledge